

# THE AUTOMOBILE AND MOTOR REVIEW

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OCT. 25 1902  
Circulation Entry  
JUL 27 1904  
CLASS. & REG. NO.  
132358  
COPY B.

NEW YORK — SATURDAY, OCTOBER 25, 1902 — CHICAGO

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SOME OF THE MACHINES FOR WHICH PERFECT SCORES ARE CLAIMED IN THE A. C. A. RELIABILITY CONTEST.  
(For descriptions of autos see table on page 3.)

## RELIABILITY CONTEST OF THE AUTOMOBILE CLUB OF AMERICA.

### Review of the Run from New York to Boston and Return— Comparison With Previous Contests Both Here and Abroad—Cars on the Road and Off.

**R**ESULTS of the Reliability Run of real technical value can only be arrived at by the tabulation and computation of a mass of figures a task which must necessarily take some time, though it is to be hoped that the announcements of the final awards will not be delayed as late as was the case last year. Pending this technical information there is still much that can be said of a general nature, in addition to the narrative of the run as published last week. Apart from the direct interest attaching to any great event such as this, there is an indirect interest that is possibly even more important in its relation to past and future events of the same kind. The reliability trial, or endurance run as it was first called, is not only the most productive in practical results of all forms of motor-ing sport, but it is the best possible under existing conditions of legislation in this country. The roads and the law together are against such long-distance road races as Paris-Berlin and Paris-Vienna, and closed-track races can appeal to but a limited number of participants. Should any of the rather visionary plans for a special motor car roadway, of considerable length, be realized there will be an opportunity for straight-away races of from twenty to fifty or more miles, which would undoubtedly interest both amateur and professional drivers, but this of course is still all in the air. It is unlikely that any kind of racing, even if permitted, will prove as valuable to the industry as a well managed reliability trial, and in any event motorists must needs be contented with the latter for an indefinite time to come.

#### THE FIRST ENDURANCE RUNS.

It is quite possible that such a public competition as a reliability trial cannot be brought under exactly the conditions found in touring, but the attempts of some foreign clubs to imitate such conditions have proved quite successful, and the present trial as compared with that of last year shows a great advance. The following table shows the general results of this and the three preceding trials:

Comparative results of Endurance Runs from 1895 to 1902:

Date.	Distance. Miles.	Roads.	Power.	Entered.	Started.	Finished.	Per Cent.
1895	38	Bad	Gasoline	10	5	1	20
1896	30	Good	Gasoline	8	7	3	43
1901	394	Bad	Gasoline Steam	83	78	41	53
1902	488	Good	Gasoline Steam	80	76	68	90

The two early runs at New York and Chicago were experimental in themselves and the vehicles were also only experiments.

The run of last year, though nominally on the same technical plane as the present one, was really a very different affair, the restrictions on speeding being openly ignored by a number of competitors, while no attempt whatever was made to supervise or limit the repairs to the cars. As an advertisement of the motor car it was a success, and it served a good purpose in stimulating the public interest in the industry and in encouraging the makers to new efforts, but it gave nothing permanent or substantial in the way of data. While it is impossible to say how much in the form of really valuable data may be derived from the present run, it is at least certain that it has been a success in giving a fair everyday test of representative American cars of all classes over fairly good roads; and further in creating a very favorable impression as to the practical value of the motor vehicle on the public mind.

#### CONDITIONS FOR FUTURE TESTS.

The conditions of the present contest have been published in full and also discussed in detail, so that it is not necessary to reproduce them here; it may be said, however, that they were very satisfactory so far as they went. The principal criticism is that the test was incomplete at both ends, and in any future events it is probable that the general conditions will be modelled very closely after those of the recent British trials. The trial of last week was open to all makes and types of cars, without restrictions as to arrangement, equipment or details of construction; and though the committee reserved the right to reject any car, there was no statement as to what would be considered good ground for such rejection. Every car was accepted as it came to the scales, it was allowed to start, and though closely watched throughout the contest, as soon as it was timed at the last control on Fifth Avenue it was out of the hands of the committee and the club.

The English plan is far more thorough, and—even apart from the classification by selling price instead of weight—it is far more valuable as a guide and guarantee to the intending purchaser. In the first place every car is inspected by the committee, especially as to arrangement of parts, strength of construction and brakes; after this inspection it is subjected to an actual trial of the brakes on a hill. During the

period of the road trials the cars are closely watched by observers and all repairs or alterations are noted, and after the road runs are concluded the cars are locked up in a garage until they can be again inspected and graded as to condition. Both of these operations—the preliminary inspection and rejection of racing cars and other undesirable types, and the final inspection and report on condition—are absolutely essential to a satisfactory and conclusive test.

#### SPECIAL CARS AND INSPECTION.

In the present case, though the trial was obviously intended only for road cars, no attempt was made to exclude freak vehicles or to establish the important fact that those cars entered nominally from stock were not of special build; while a car might be driven to a point only short of absolute wreckage and yet if she finished the course on time and with a clean score she would be eligible to the highest award. The agents of the Oldsmobiles, one of the light cars which promises to come out of the trials with an excellent record so far as it goes—as to the actual performance on the road—took steps to remedy this deficiency in the rules by requesting of the club that it inspect the cars on the evening of the finish and certify to the fact that they were in all respects identical with those regularly sold from stock. There would be no serious difficulty in stabling all the cars in one large building on the day prior to the start and inspecting them, and also on repeating the performance on the return. It would involve, it is true, more work for the committee and somewhat more trouble for the competitors, but the results would justify both.

The classification in this as in the previous contest was by weight, but it is an open question whether the British method, by actual selling price (as mentioned in detail in our reports of the British trials), is not better. It certainly helps the purchaser and the maker as well in that it is a direct inducement to buy. It is quite as easy of application as the weight limit.

#### ADDITIONAL INFORMATION.

The conditions were deficient in several minor details, there being a doubt as to whether a stop of a fraction of a second would be counted, while there was no direct prohibition on allowing a car to run backward on a grade—so long as it never came to a measurable stop. The following letter relating to the latter point was sent out to each observer immediately after the finish:

"NEW YORK, Oct 17, 1902.

"DEAR SIR: It has come to the knowledge of the Contest Committee that some automobiles in the contest made detours so as to kill time, on finding that they were ahead of their schedule; and also some drivers permitted their automobiles to run backward on hills while the motor was still going, and then went ahead.



If the operator of the vehicle on which you were an observer did any of these things, the committee desires to know it and requests that you answer the questions below so that they may become acquainted with the facts. Kindly reply at once in the enclosed stamped envelope.

"On behalf of the Contest Committee I desire to express their thanks for your valuable services in connection with the contest.

"Yours very truly,

(Signed) "S. M. BUTLER, Sec.

"1. Did the driver of the automobile on which you acted as observer kill time

on which you were an observer permit his carriage to run backward on the hills, keeping the motor going so as to get sufficient speed to mount the hill?

"3. Did the driver at any time leave the scheduled route, except at Windsor Locks, where a detour was necessary on account of the road being torn up, and between Worcester and Boston, where the arrows had been taken down?"

#### PUNCTUALITY AT THE CONTROLS.

With the experience of this year as a guide the way is open to improvement of the rules in minor details that will relieve operators and observers of possible doubt

tual arrival at all controls is a thing to be encouraged in every way, and it is a question whether the ten minutes' grace allowed this year is necessary or desirable. Its use in the majority of cases was to help out those who, by speeding early in the day, were a long way ahead of their schedule on entering the town, rather than, as intended by the committee, to allow a reasonable leeway for gauging the last few miles on an unknown road. There might be a series of several prizes for the best records for punctual arrival at controls; and while it might be well to allow a five or ten minute interval after



OFFICIALS TIMING THE START OF S. G. AVERILL'S FRANKLIN MACHINE, B-45, AT SPRINGFIELD, MASS.

by making detours on finding he was ahead of his schedule?

"2. Did the driver of the automobile

and at the same time will give fuller recognition to the work of those who observe both the spirit and the letter. The punc-

the hour at which a car is due, the interval preceding the hour could be cut out. The tendency of the majority is to get into the outskirts of the control town from twenty to forty minutes ahead of their schedule and to kill time by a ridiculously slow march through the streets instead of a smart dash at the highest legal speed. What was very much needed was a flag marking an exact mile from the control, as it was in most cases impossible to gauge the last few blocks at all closely, and a man was likely to turn a corner suddenly and come full on the green warning flag within but a short distance of the red one. With a good road map, such as the book afforded, and with prominent

#### Names of Automobiles in Front Page Group

- No. C-1. PACKARD, 24 Horse-power
- No. B-68. FREDONIA, 9 Horse-power
- No. C-76. FOURNIER-SEARCHMONT, 8 Horse-power
- No. B-11. HAYNES-APPERSON, 9 Horse-power
- No. B-31. STEVENS-DURYEA, 6 Horse-power

landmarks at intervals of from three to five miles, it was an easy matter to make a time schedule for every stage and to live up to it, except in the case of accidental delay, until it came to the last twenty minutes and the last mile or two. In connection with the prohibition of detours in order to kill time there should be a positive prohibition of the practice indulged in by some, of zig-zagging across the street, from curb to curb, within the last few blocks. This is not only an obvious evasion of the rules, but a most dangerous practice, blocking the entire street.

While the awards go only to those making the highest scores, there were some notable instances of pluck, perseverance and skill in making difficult repairs and continuing the course even though all chance of a winning score had disappeared in the delay. This work is worthy of a special prize of its own; in fact, every man who drives his car through, even though so delayed as to make his score of points worthless, is deserving of some official record.

#### THE CONDITION OF THE ROADS.

A comparison of the various reports will doubtless show a marked discrepancy in the description of the roads, some classing them as bad, where others call them good. This is merely a matter of the point of view, as both designations are virtually correct. In a general way the roads between New York and Boston during the week of the trials may be fairly classed as good; that is, for nearly the whole distance they were easily ridable at a good speed, with no unusual delay from mud or ruts and no serious skidding. As compared with the roads between New York and Buffalo in September of last year, they were most excellent. So far, then, as the run and the cars were concerned, the roads were good.

Taken in themselves, apart from the contest, many of the roads were really good, but others were discreditable to the communities which tolerate them. In many cases both methods and materials were very bad, and in other roads which were fairly good in construction were spoiled by neglect. For some distance out of Boston the roads were of macadam, but they were wide and with little crown; low spots filled with puddles of water were frequent, and the surface—after Sunday's rain—was made up of a thin layer of mud. This latter was particularly noticeable in the numerous villages where the road was shaded by trees. With ordinarily good maintenance all of this road might have been classed as very good.

There were some places, notably in the wilder and less thickly settled country between Springfield and Worcester, and on the hills, where no attempts at road improvement have yet been made, and where the road in its natural condition would have been very bad in a heavy rain, though fairly ridable on the run.

#### ANCIENT AND PRIMITIVE METHODS.

The worst roads were those just south of Springfield, for some miles; the ancient methods of road-spoiling being apparently in existence. What was most discouraging was that the process of so-called improvement was even then in progress; the roads were of dirt, and fairly good in dry weather, but the ditches had been cleaned out and heaped into the middle and on this base a new surface of poor dirt, more clay than gravel, was piled. The crown was excessive and there were no evidences of any attempts at rolling the loose dirt. The cars cut deep ruts in these roads, and with a little water to fill them this stage of the route would have been only second to that of last year, west of Herkimer.

The route between New York and Boston, uniting two great centers and including as large a proportion of good roads as any other available section, is likely to be used in the future for similar contests, being extended and varied by a change of the homeward route such as was not possible this year. For the coming year a much longer tour is already suggested, from New York to Montreal, a distance of about seven hundred miles in all. Much of this would be over pretty poor roads, and these, with the distance, would shut out the lighter class of cars, such as have made a good showing in the present test. In this case it might be possible to divide the course, allowing the smaller cars to return from some half-way point, while only the more powerful ones attempted the entire trip.

#### THE SUPREMACY OF GASOLINE.

It is a fact worth noting at this interesting stage of development, when the motor car is recognized as a practical pleasure and business vehicle, that the one source of power in this, as in last year's test, is gasoline. Every car relied on this invaluable agent for its life and motion, even the single one officially entered under the head of "electric" carried an explosion motor as its prime source of power. While there was one outside car with the fleet on the return trip which burned kerosene, all the steam cars which competed used gasoline, as did all the cars with explosion motors. The competitors in the two tests were divided as follows:

Classification by Motive Power in Runs of 1901 and 1902.

Class.	1901			1902		
	Gasoline.	Steam.	Total.	Gasoline.	Steam.	Total.
A	8	7	15	10	2	12
B	22	15	37	28	16	44
C	16	1	17	17	2	19
E	—	2	2	—	—	—
	46	26	72	55	20	75

So far as the dreaded foreign invasion is concerned, it does not figure in these tests, but four foreign cars made the run

of last year and but six this year. Last year some sixteen cars were entered by individual owners, while this year there were only ten which were entered by others than their makers or agents. The number of makers represented last year was thirty, while this year it is less by three. Of these thirty makers no less than eleven are absent this year, making eight new competitors.

#### CHARACTERISTICS OF THE CLASSES.

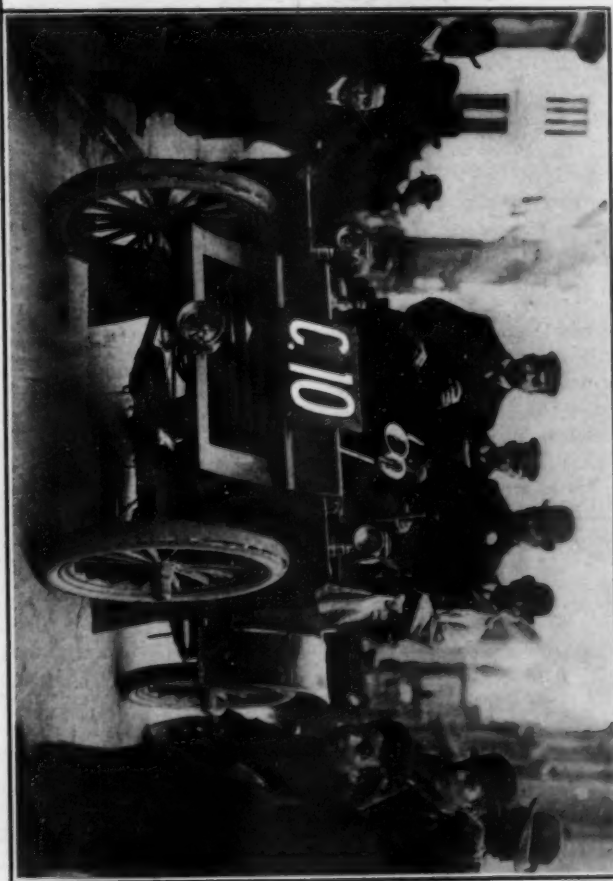
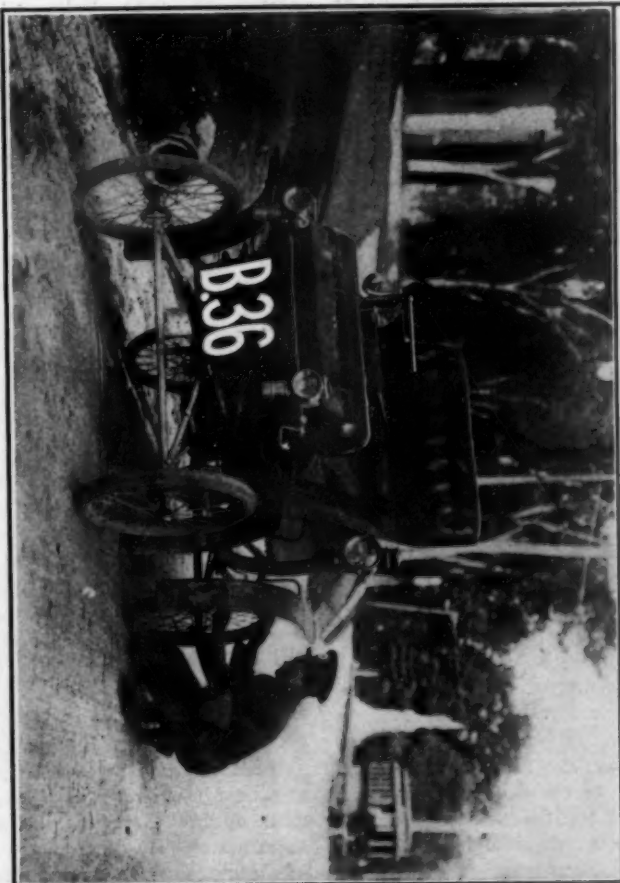
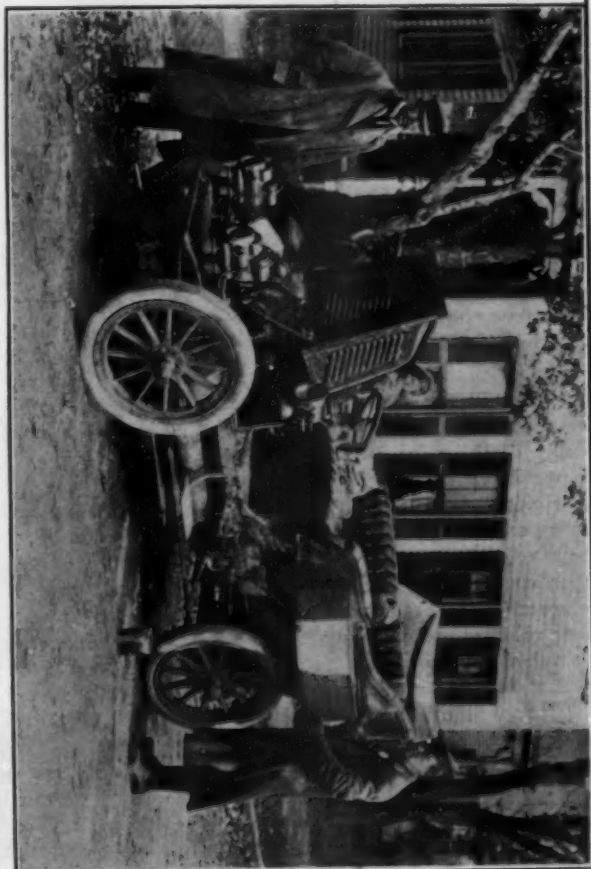
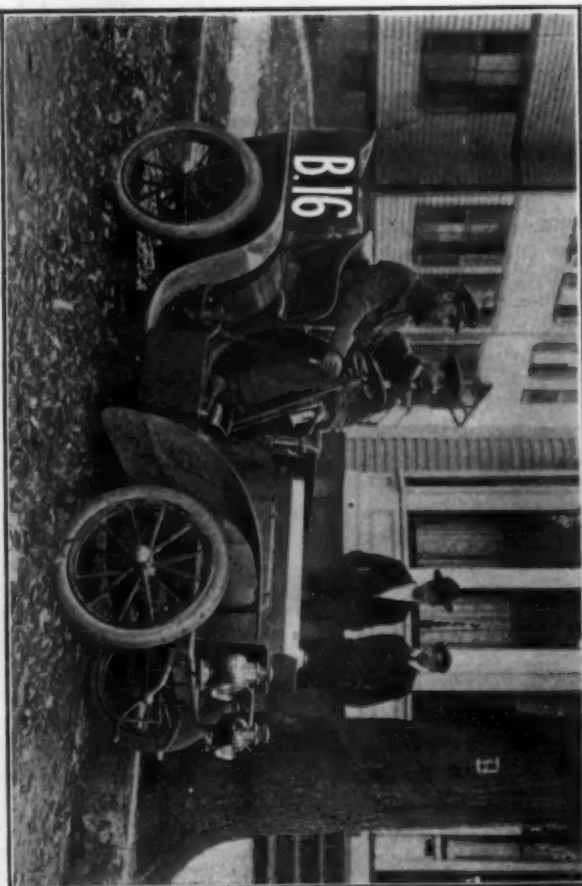
The entries in Class A gasoline last year included a number of motorettes and runabouts, the latter with the usual tubular running gear; this year the main characteristic of the class was the light runabout with spring running gear and no reach, which in several different makes has become so generally popular through the season. The good work of these little cars, all things considered, is one of the pleasing features of the test.

The Class B gasoline entries of this year showed a marked improvement over those of last year, in form, comfortable seating capacity, frame construction and motors. The steam cars in Classes A and B showed little change of form, the improvements being in such details as did not appeal to the casual inspection. The Class C entries included a number of new and powerful touring cars, mainly with tonneau bodies, as compared with the surreys and the heavy two-men cars of last year. While some were run without the tonneau body, the class as a whole gave evidence of good passenger capacity as compared with the phaetons and stanhopes of last year which carried but two persons with almost as much weight. There were, however, some pretty massive and heavy cars in this class in addition to the two big Packards which headed the list.

Class E, commercial vehicles, was not recognized this year, though two of the cars in Class B were light steam delivery wagons. Apropos of this class, it might be well for the A. C. A. to consider the question whether the time has yet come for a special test of commercial vehicles? The development of this class, in all types of light, medium and heavy delivery wagons, drays, trucks and tractors, to a point where a man can purchase a vehicle exactly suited to his wants with the same ease and the same certainty as to performance as in the case of a horse-drawn vehicle is being eagerly awaited by business men throughout the country. It is quite possible that a road test similar to the "Criterium des Poids Lourdes" from Paris to Nice last spring might show that this time is still distant; but such a test should certainly find a place, with an early announcement, in the program of next year's events. It could best be made an entirely independent event, with no connection with the regular endurance run, the route and conditions being such as would best test the commercial vehicles.



October 25, 1902



New Ward-Leonard Gasoline Touring Tonneau.

The trouble halting a Locomobile.

New Fourster-Sacramento Car, with dust guard behind tonneau.

Elwood Haynes driving a Haynes-Apperson survey.

SNAP SHOTS OF PROMINENT MACHINES TAKEN ON THE HOME RUN FROM BOSTON TO NEW YORK IN THE RELIABILITY CONTEST.

### STRAIN OF SLOW TRAVEL.

*Peculiar Mental Hardships Endured by Drivers of Gasoline Vehicles in the Reliability Run.*

"The whole contest was undoubtedly a very successful affair, and managed with great skill," said Mr. Weiss, of the Packard company, when seen on the subject at the rooms of the Automobile Club of America. There is a nervous strain, though, in the strict compliance with the rules, which nobody would realize till he tried it and which is not altogether enjoyable. It takes a man who knows his machine exceedingly well to keep it close up to an average speed of 14 miles an hour, no more and no less, and never have it stop. The inclination is to let the car out a little on good level stretches, but if you do, you make it still harder for yourself to keep within the time limits on the rest of the way to the control. Running on the high gear, as a good driver is naturally inclined to do whenever he can, there are times when the motor is barely turning over, and in throwing in the lower gears you take more chances of ignition and other motor troubles. My driver frequently warned me that the motor would be liable to balk and cause a penalized stop, if I persisted, as I did, in picking my way up some of the steep hills on the high gear, relying on working the clutch for keeping both the motor and the car going. You know, of course, how this can be done, but it is a good test of a man's skill with his particular car, when it must be done right along on account of the speed limit, and with a penalty attached to the least miscalculation. When it is kept up for six days the mental strain is something enormous."

SAYS IT IS "FIERCE."

"It is fierce," echoed a bystander.

"Perhaps the spring connection of the flywheel on your machine makes it safer to rely on the clutch in the way you describe, than it would be with the majority of gasoline vehicles," suggested the representative of this publication.

"Probably so," cheerfully admitted Mr. Weiss. "On the other hand, we started out with the idea not only of adhering closely to the rules but also of avoiding all possibility of being suspected of having violated them; and this resolution did not make the work any less exacting. It was a reliability contest, but much of the reliability depends upon the fact that the occupants of each vehicle watch all the other vehicles pretty closely. I think that is a valuable feature of having all the contestants together on comparatively short daily runs. I can hardly see how it can be dispensed with. If you want to have everybody admit freely that you have fairly earned your cup and your certificate, you must avoid, as much as possible, to take advantage of any of the rules and regulations which can be used to shield an involuntary stop, or at least to prevent one.

After you have crawled up over a long hill on the low gear—the motor going at full speed—there is more or less danger of something running hot, either motor or bearings, and it is quite a convenient rule that permits you to have some trifling tire trouble at that particular moment, which can be attended to without penalty while the machine at the same time cools down a little; especially if there is another hill in front of you. Demands of nature come handy in the same way. I don't know that anybody did actually take advantage of what might be done in this manner, but we thought it wise to avoid even the semblance of doing it. In a couple of instances we went through to the control although the tires really required attention, and once our observer consented to a little hardship, so that we might not have a stop on his account."

### STEAM VEHICLE MAKER'S VIEWS.

*Paul H. Deming of the White Company Gives Suggestions for Betterment of Contest Rules.*

"It was beautifully managed, and, no doubt, it is an excellent thing to have had it demonstrated that practically all automobiles can make a trip like this without going to pieces. To see seventy motor carriages running 500 miles through the most populous sections of this country and coming back together is an object lesson that is not easily forgotten, and it will have its effect." Thus spoke in substance, Paul H. Deming, the manager of the White Sewing Machine Company's eastern depot and the driver of one of the five steam cars entered by this company in the reliability contest. "I believe," he continued, "that a few of the repairs went a little beyond what was contemplated in the rules, but on the whole the plan of the contest was carried out very nicely and without much friction of any kind. As a test of one car against another, however, it was far too easy. There was not any stretch of what you could call really bad road on the whole course. From the standpoint of the manufacturers and for those who know pretty well what an automobile will do, the contest did not prove anything that was not known beforehand. It did not compare in this respect with the New York-Rochester contest of last year, but it did show that when the roads are good it is a picnic to run 500 miles. Many of the cars could have turned around and made the trip over again, but just which ones could have done it there was no opportunity to ascertain. The next contest should, in my opinion, be laid over much poorer roads, and not this alone; the distance should be greater and the trips each day should be longer, probably 100 to 120 miles. Among other changes in the arrangements which I think should come up for consideration, I would suggest that the rules be made alike for all classes of vehicles. In last week's trials 20 minutes of unpenalized stop was al-

lowed the steam cars for taking in water between controls. While it is understood that this was a necessary provision to enable the majority of the steam cars to earn a clean score, and without which they would have had no chance, this did not hold good for all of them. In the test the results of which are given to the public each vehicle should stand square on its actual performance without any discriminations, so that the public may see what each of them is capable of doing. A change in the stop rules might be necessary for this, but it should be alike for all."

### SHORT SECTIONS ON THE ROUTE.

"How would it be," Mr. Deming asked, "if the whole route were divided into small sections, say 15 or 20 miles each, with a short compulsory stop at the end of each of them to permit the time to be taken? Could not the reliability of a car be measured with sufficient accuracy by its ability to make all of these stations on schedule time, deducting points in proportion to its failure in accuracy of timing, and without regard to intervening stops? If, indeed, the sections could be made even shorter to guard against bursts of illegal speed and serious repairs."

"Something of that order, perhaps," remarked Mr. Deming dubiously, and again took up the thread of his previous observations. "The time allowed for repairs in the morning before each day's run was probably too long. Many of the contestants did not make any use of this time, while for others it was a highly necessary period for overhauling and adjustments. The results of the contest do not show which was the case, and yet it seems as if it should be considered a matter of some importance whether a car requires repairs of one hour's duration or more each day, while another runs through all of the six days with hardly any attention beyond mere inspection. For the next contest I believe I should be in favor of reducing this time to about 20 minutes, or just enough to insure the orderly departure of the vehicles without crowding. The proposition which has been made for a change of the official observers from one car to another, every day, is, I think, a good one, not only for the reason that has been advanced, that two persons, strangers to one another, who are thrown together in such intimate relations for six successive days, are liable to become either very friendly or very hateful, in a way that might affect the observer's impartiality in one direction or the other, but still more for another reason, or two, of what seems to me more weighty nature. In the first place it would contribute to the right kind of sociability by getting many more of the participants acquainted with each other, and then, too, it would render it possible to secure a class of observers who now hold aloof because they have no guaranty of being





LEONARD D. FISK'S 12 HORSE-POWER PANHARD et LEVASSOR, No. C 66, IN NORWALK, CONN



C. R. MABLEY'S CHARRON, GIRARDOT et VOIGT "OUTSIDE" CAR AT THE GARRAGE IN BOSTON.

placed in a car in which they would be interested. There are plenty of influential and intelligent people all over the country who would be glad for an opportunity to try out six or seven different vehicles on an occasion like this has been, but do not relish the idea of riding for a whole week in one little dinky car, all the time together with one unknown person who might not prove at all congenial. I should also think that the press representatives and technical contributors to our periodicals would much prefer to ride as guests rather than as observers, and being more or less personally interested in the various firms who compose the industry, they really should not be considered eligible for an observer's duties so long as others are available."

#### INSPECTION AT START AND FINISH.

"A commission of well-known, technical men of national reputation to inspect the cars before their departure on the first day and after their arrival on the last would be a feature of future contests which would seem almost indispensable, if it is the object to pass judgment on the comparative merits of the contesting vehicles. A car that reaches home with its motor 'knocking,' its rear axle trussed up with wires, its springs bandaged and its wheels askew, should hardly be considered in the same class with another which is capable of repeating its performance. But this distinction has not so far been made."

#### LARGE HUBS ON HEAVY CARS.

**George P. Weiss Explains Why the Packard Car Was Fitted with Immense Hubs.**

The foremost representative of the Packard interests in the reliability contest was George L. Weiss, vice-president of the Ohio Automobile Company. Some of these interests were in the hands of Harlan W. Whipple, who drove the huge 24 horse power Packard which had been made to his order, but Mr. Weiss, as the builder, bore the brunt of anxiety in regard to its performance under the club rules. Mr. Weiss drove a 12 horse power machine carrying three persons and a little heavier than the ordinary model, and besides this machine two other Packards took part.

"Few persons have any idea of what it means for a manufacturer to enter a machine very much heavier than anything previously built by him, in a contest of this kind," said Mr. Weiss, with reference to the Whipple car. "The increased weight and power introduce new questions of strength and construction in all parts of the machine, and they must all be taken care of. That the car should go through entirely without trouble was certainly more than could have been expected under the circumstances, and that it did so was very gratifying to us and has increased our confidence in ourselves. Whether that style of heavy car is other-

wise a desirable type is another question, weighing, as it does, about 4,000 pounds and therefore naturally severe on the tires. Its load of humanity in this instance was an additional 1,100 pounds, and as a matter of fact the only troubles which were encountered were tire troubles. Three times it was found necessary to replace the inner tubes."

"The large projecting hubs on that car seemed to be very generally noticed?" ventured the interviewer.

#### LARGE HUBS GOOD CONSTRUCTION.

"They are there for good mechanical reasons," said the builder, "but people don't look into those things very deeply. They like to have a fling at anything they have not seen before. There are certain vital points in automobile construction where you cannot afford to take chances; and the steering knuckle is one of them. Besides, when you put the wheels under a heavy car like that one is, on ball bearings, you must protect those bearings. Now, in this car it was particularly desirable to have the steering pivots as close up against the hub as possible and nearly in line with the plane of the spokes, so as to reduce the leverage on all strains and thereby the chances for mishaps and mis-alignments of the wheels as well as the knuckles. In order to obtain this effect it was necessary to reduce the extension of the hub on the side toward the car, and if we had not extended them correspondingly on the outside, the width of the ball-bearings would have been insufficient. That is the reason for the large projecting hubs on the front wheels. Those on the rear wheels had to be made similar in order to correspond in appearance, as you can readily imagine. For that matter this construction is not original with us, but was designed for us by Mr. Baker, of Cleveland, who in our opinion, is the greatest expert in this country on all matters connected with ball-bearing construction. He has at least succeeded in carrying much heavier loads on ball-bearings than any other constructor."

#### COMMENT ON THE CONTEST.

**Interesting Odds and Ends on the Route That Appeal to the Humor of an Observer.**

There is as yet no good collective term to summarize such a migratory assemblage of cars and men as provided amusement for thousands of spectators through New York and New England last week. The French term, "raid" is no more definite and appropriate than "fleet," "caravan" and "cavalcade." Whatever it may be called, this assemblage included seventy-five, contesting cars, all on four wheels, with a dozen more outside cars in company; the contesting cars carried in all 173 persons—operators, observers, mechanics and passengers—while the outside cars accounted for probably fifty more. In addition there were newspaper men, photographers, the agents

of the tire companies, and other representatives of the trade. It is safe to say that the party made up in all some 300 persons. But one lady took part in the contest, Mrs. A. L. Riker riding for several days beside her husband on the front seat of his handsome touring car. Several ladies made the run in the outside cars, while others accompanied the procession over one or more stages.

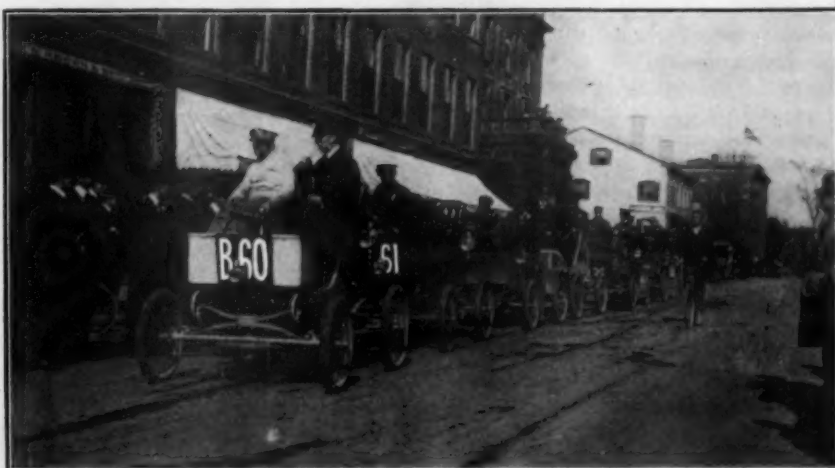
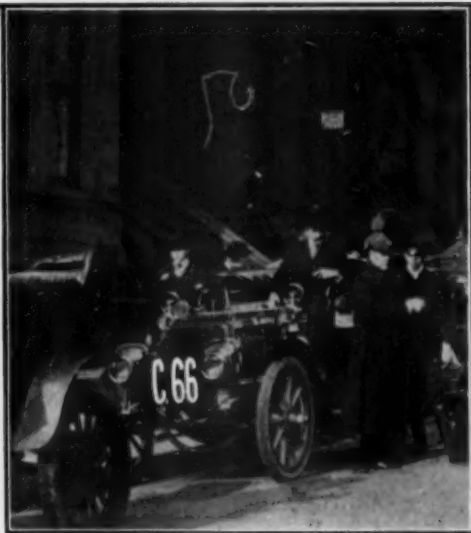
While a matter of 300 people should not tax severely the hotel capacity of such cities as New Haven and Springfield, the sudden invasion of an unknown number of hungry men, with appetites keen-set by a ride in the morning air, and with but a limited time for luncheon, caused some hurry and inconvenience at the noon controls. There was a certain amount of grumbling, perhaps with good cause, but as a rule the men were out for a good time and made light of trifles. As long as they had a clean score and full water and gasoline tanks, they worried little over ordinary troubles. The hotel arrangements were, on the whole, all that could be expected, and reflected much credit on the management of Mr. Butler, especially as he is new to the advance agent business. Apart from the careful planning ahead, he was on hand in person to look after the details of the moment, a task that was by no means easy or pleasant.

#### SCENES AT THE HOTELS.

In one or two cases the hotel service was very poor, men being crowded by two or three into small, stuffy rooms, while they were forced to start in the morning with a mere apology for breakfast. This, however, was conspicuously not the case at the Berkeley in Boston, where many of the observers were quartered. One fastidious individual, however, went on strike because the club had made no provision to give him a room to himself over Sunday, but expected him to share it with another observer. His last remark as he left the desk after trying in vain to get a room for himself alone was that there would be a vacant chair on his car on Monday. If this was the case it was quickly and easily filled, as were other seats vacated by reason of the weather outlook on Sunday morning. Several observers, on viewing the dismal drizzle, discovered that they had important business in New York or elsewhere on Monday morning.

It may be said of this party that it was out for fun, first and last, and it was animated by a spirit of good nature and camaraderie, making light of the slight drawbacks and enjoying to the full the freedom and fresh air of the week. To those who as makers, or still more as operators responsible for the success of their cars, the results meant much, the test involved hard work and some worry; but apparently these did not interfere with their enjoyment of all the pleasure the run afforded. As a rule, the ordinary cares of business were left behind





"Flag" Car Homeward Bound.

Start of the Last Period at Norwalk.

The Gasoline Supply Depot at New Haven

Leonard D. Fisk's Panhard.

Timing Arrivals at Worcester on the Home Run—Grout cars in front.

"Outside" Car Undergoing Tire Repairs.

INTERESTING PHOTOGRAPHIC SKETCHES TAKEN ON THE RETURN RUN OF THE NEW YORK-BOSTON RELIABILITY CONTEST.

and business rivalries were forgotten for the week. The morning and noon controls in particular, in spite of the rush and bustle and necessary work, gave opportunity for pleasant social intercourse which was supplemented by the several entertainments at night.

#### AN AMUSING INCIDENT.

Possibly the most amusing incident of the trip, though it caught the eyes of but a few, was on the entry into New York. Going down Seventh Avenue was a coupé with a big trunk beside the driver in front. It stopped, the door was flung open, and an angry young man sprung out. He rushed to the rear of the coupé where an old shoe was dangling from each spring, while a big sign on the back announced "We are Just Married." He tore off the shoes and the sign, and before he could slam the door, a pretty but anxious face was visible inside the coach.

Undoubtedly the most abused man on the trip was the Kaiser of the Garage, Mr. Cox, whose post was by no means a sinecure. He had certain rules to enforce, and he did it, to the disgust of operators whose observers had overslept, and of observers whose operators were equally tardy. Now that it is all over it will probably be recognized by all that Mr. Cox had as little real fun out of the trip as any one of the party.

If you do not know how to pronounce garage, make it rhyme with "carriage"; you may not be right, but you will be largely in the majority, and that is a good deal in this world. The late John Boyle O'Reilly had a motto, "I'd rather be Irish than be right," and it's pretty hard for one to be an American and at the same time to be just right on modern motoring terms.

#### ADVERTISING SIGNS SCARE.

The injunction against advertising signs was observed both in letter and spirit by the contestants, as the appearance of the caravan testified. On the return trip, however, an exhibition of very bad taste was made by a local agent of a contestant, who had on the road a car decorated with signs calling attention to the famous chromatic car which had the honor to be represented by him, and which would pass through the town as a special feature of the Reliability Test.

Never cry until you are out of the woods; one car which left Norwalk with two big American flags flying in honor of its triumphal return was last seen stuck on the hill on Pelham Avenue, with the observer pushing. Another car, whose passenger had to use a megaphone in order to relieve his feelings of joy on the return, had the honor of barely preceding the sarcophagus that was the last to finish.

One funny strike was that of an operator of a steam car who appealed to Mr. Butler to give him another observer, as the one assigned to him had heart disease and could not pump.

#### OWEN PLEADS FOR MORE FUN.

**Would Also Like to See Collective Rather Than Individual Effect in a Reliability Contest.**

"Many others besides myself, I know, were very curious to see how the small cars would come through this 500-mile run, and I dare say that the first impression with most of us was one of surprise over their success."

This was the first deliberate statement offered by Percy Owen, of the Winton company, when his opinion was solicited with regard to the interesting features in the Reliability Contest.

#### LUCK AN ELEMENT.

"As we progressed it became evident enough, though, that luck played an important part in this event, for the simple reason that the roads were too good and the rules quite easy on vehicles, so far as the strength of their structure was concerned. At a faster pace it might have been different. It was a test of painstaking care as much as of anything else. If we had had rain instead of fine weather, I don't know what would have become of us all. I for my part had my fill of skidding around on muddy dirt roads last year on the trip to Rochester and would not care to repeat the performance. There is not enough compensation in any contest for incurring the dangers of traveling in automobiles over very slippery roads; and this feature is very nearly the same for big cars as for small ones. On the hills near Worcester I noticed the tracks where ordinary wagons had slewed down sideways only a few days previously, and it made me realize very plainly what we would have had to contend with if the rains had continued. When it began to sprinkle near Boston, continuing all of Sunday morning with a disagreeable drizzle, a friend, with a large car, and myself, made up our minds that we would run down to Providence and take the boat home unless the rain stopped.

#### DISTRIBUTION OF OBSERVERS.

"Some cases came under my observation in which the distribution of observers seemed to operate somewhat to detract from the pleasure of the trip, turning it into more serious business than some of us had contemplated.

"I take the standpoint that there is plenty of room in the industry for all good cars, and that all the time one spends in looking out for the shortcomings of one's competitors, is worse than wasted in a case like this, where the conditions are easy and there is a fine opportunity for having a good time and getting acquainted. I tried to contribute my share to the good feeling and took the work portion of the event perhaps a little more lightly than many others.

"When 75 automobiles are keeping together as well as we did for 500 miles, it is a demonstration for the whole cause, and there is not much room for sharp

distinctions between the merits of the various machines except in case of absolute failures. All the minor details are swallowed up in the excellence of the whole performance.

"It remains then for each manufacturer, it seems to me, to adopt other means for furthering his own business separately, and to embrace all the opportunity offered in a contest for doing something else, of equal or superior value by getting the movement and the industry as a whole before the public in the best light consistent with the facts. I can see nothing that would have this effect so much as a general relaxation of the tone among the contestants.

#### WORK FOR COMMON GOOD.

"So long as everybody is working for himself alone, progress in construction is bound to be slow, but when all get to know each other in a pleasant way there will be an interchange of opinions and a frank showdown in performances from which all can profit. This is perhaps the principal reason why there should be a change of the observers every day. You would get a different class of men for this duty, then; not persons connected with the trade and more or less prejudiced, but engineers and business men engaged in other lines of work, though interested in following automobile matters from the outside. They would cement the whole excursion party into one body instead of a number of cliques. Before long everybody would know everybody else and the stops for luncheon and for the nights would develop into something that we have not seen yet at any of the contests.

#### HOTEL ARRANGEMENTS.

"I want to mention, by the way, that there must have been a slip somewhere in the hotel arrangements, as several observers were actually assigned by the hotel keepers to sleep in rooms, and even in beds, with persons who were complete strangers to them. Needless to say, they usually preferred to go elsewhere and pay out of their own pockets.

"In other respects the club's part in the arrangements was certainly carried out with remarkable foresight and consideration for all who took part."

#### AN EXPERT VIEW OF THE CARS.

**Consideration of New Features and Modifications of Old Ones in Detail—Few Novelties.**

Both in the half dozen cars which made their first public appearance in the Reliability Run, and in cars of the older makes, where these have been modified since the beginning of the season, the present tendencies in construction were visible. There were comparatively few novelties, and those shown were for the most part confined to details of construction, showing that, however far all or some of the builders may be from the types destined finally to prevail, most of them have at least



brought the styles to which they at present pin their faith to a fair working degree of serviceability.

#### FEW NOVELTIES IN STEAMERS.

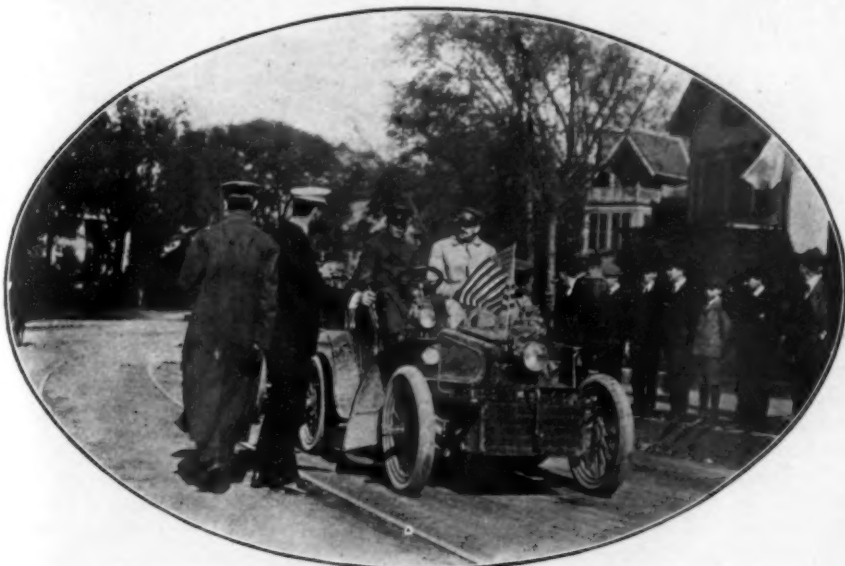
Few novelties were shown in the steam vehicles. The tubular reach underframe

chine of S. T. Davis, Jr.—the *reductio ad absurdum* of the condenserless steam touring car—none of the machines presented the lines of an out-and-out touring car. But if none of them was a touring car, many, thanks to careful perfecting of de-

almost be invidious; but in several respects the performance of the White steamers deserves special mention. They were almost noiseless in running, they charged the steepest hills with hardly a reduction of speed, none of the hills proving long enough even to compel resort to the hand pump, and with hardly any exception they ran from control to control without a stop. Apparently the condensers with which they were fitted performed their service well.

#### BURNER TROUBLES NOT NUMEROUS.

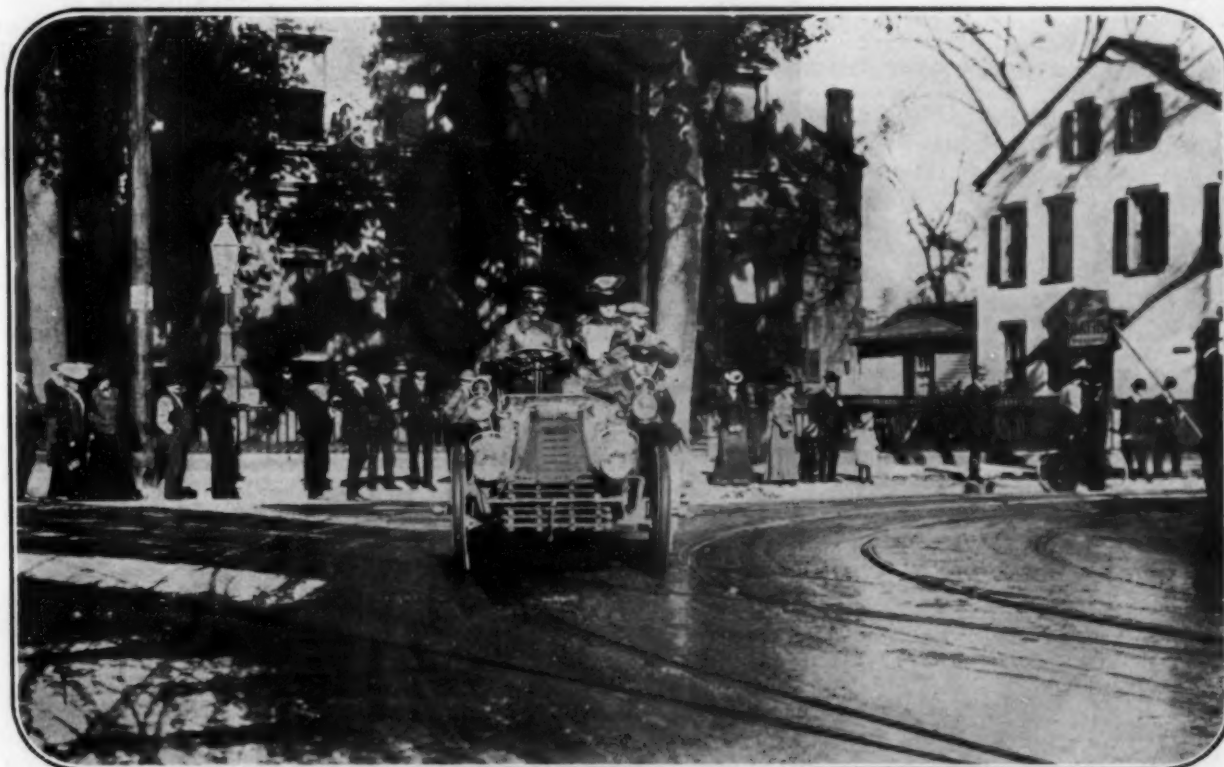
Burner troubles, once so prolific of stoppages, seemed almost absent this year. The engines required only oiling, and broken gauge glasses, while not unheard of, were infrequent and did not necessitate stops. The running gears endured successfully the not very severe test of the few dirt roads encountered, which could not be said of some of the lighter gasoline machines. Occasional defects were revealed, as, for example, in one machine, the body hanger bolted to one of the rear springs gave way, letting the body down on the rear axle. The latter proved equal to the test, the vehicle traveling some dozen miles in that condition to the next control, where a new spring hanger was forged. One of the steam carriages, a Foster, showed the nearest approach to novelty in its class, having a very low



TIMER STARTING NEW TOLEDO GASOLINE TOURING CAR.

is still wellnigh universal among them, and none of the very recent machines in which this feature has been discarded

tails, performed the service of a touring car and performed it well, so far at least as the very conservative speed limit gave



LOCOMOBILE GASOLINE TOURING CAR ON THE RETURN TRIP, WITH A. L. RIKER DRIVING.

found their way into the list of entries. The boiler and water tank still fill the body under and back of the seat, tiller or lever steering is still adhered to, and, leaving aside the overgrown freak ma-

an opportunity to test their stamina. The twenty minutes allowed for taking on supplies was more than ample, and most machines made no stops for other causes. Where all did so well, comparison would

body suspension and platform rear springs, certainly an improvement for rough roads.

#### THE GASOLINE VEHICLES.

Turning to the gasoline vehicles it was noticeable that, while in many of the older

machines, like the Haynes-Apperson, Knox, Oldsmobile and others, the early ideas of their designers had been consistently developed into practical working form, most of the strictly new creations were on lines approximating the French cars. Notable among the latter were the new Locomobile gasoline touring car, designed and driven by A. L. Riker, the Brazier touring car, and the new Ward Leonard 10 and 15 horse power cars. Against these were to be set the Stevens-Duryea cars, with their horizontal opposed-cylinder motors in the body and three-speed transmission by individual clutches, and the Elmore machines with two-cycle engines and Locomobile running gears. In an intermediate class come the large touring cars of the Apperson Brothers, with horizontal opposed-cylinder engines lying forward, with one cylinder and the crank case under the motor bonnet, and the other cylinder under the foot board, and driving through sliding gears and a long chain to the differential on the rear axle.

#### WITH REACHES AND WITHOUT.

It is evident that the reach is on its decline among gasoline vehicles. Among the new machines, only the Stevens-Duryea and the Elmore had reaches, while on the other side could be named the Locomobile (gasoline), Apperson Bros., Torbensen, Brazier, and Fredonia cars. In this connection the Pierce motorettes should be classed by themselves. They have a 5 horse power De Dion motor mounted directly on a tubular underframe connected to the rear axle and to the front of the body. The motor drives the axle direct by pinion and gear on the high speed and through planetary reduction for the slow speed and the reverse. Although the motor and transmission come as a dead load on the rear axle, these machines went through with no trouble from this source, and, thanks to the very direct transmission of their power, showed remarkable efficiency. It is probable, however, that the limit has been reached in these machines at which such suspension of the motor is justified.

It is evident that the single chain drive identified with American construction is still the favorite. In one machine, the Franklin, the chain is of most exaggerated length, running from the motor in front of the dash, clear back to the rear axle. So long a chain has never heretofore been popular, and it remains to be seen what its future will be on this machine.

#### SYSTEMS OF TRANSMISSION.

The shaft system of transmission, with bevel pinion and gear on the rear axle, is represented by the Ward Leonard cars, the Autocar, and the Automotor. This last machine has a rear axle of peculiar construction, the bevel gears and differential being enclosed in a case which, so to say, floats on the live portions of the axle, which it steadies through tension

and compression stays extending from the top and bottom of the case to loose collars on the inner ends of the spring seats. The divided shaft forming the live portion of the axle is therefore visible between the differential case and the spring seats. This car has several other novelties, notably a flywheel clutch which acts by centrifugal force instead of by a spring.

#### CHANGES IN MOTORS.

Motor changes are mostly directed to the improvement of details, though Mr. Whipple's big Packard, Model G, had an engine, which for its makers is an innovation in having two cylinders, horizontally opposed to each other, instead of one. The lubrication of the motor is left less to luck than formerly, and several cars had positive feed lubricators, which it is to be hoped may one day be seen on all cars of touring pretensions. A very happy device in Mr. Riker's car was to carry the sparking current from the thick insulator cables, running under the top of the bonnet, to the plugs through short brass chains. Thus all danger of wires breaking or coming loose, or of insulation failing from jar and bending, is avoided. The same car had trouble once or twice due to the thick dust getting into the governor throttle valve, preventing the latter from working freely. Possibly a freer fitting in a valve of this sort nicety of fitting is far from essential—would avoid or postpone trouble from this source. The Apperson Brothers' cars were both troubled by leaky pump packings, an easily remedied fault which marred an otherwise perfect record.

#### BADGES AND MARKERS.

Distinguishing Marks for Officials and Other Participants in the Reliability Run—Road Marks.

A prominent and most necessary part in the reliability run was played by the red caps and white buttons that were the insignia of office, and the red, green and white flags and white arrows that marked the course of the run and the points

where speed had to be reduced and where resumed and where stops were to be made.

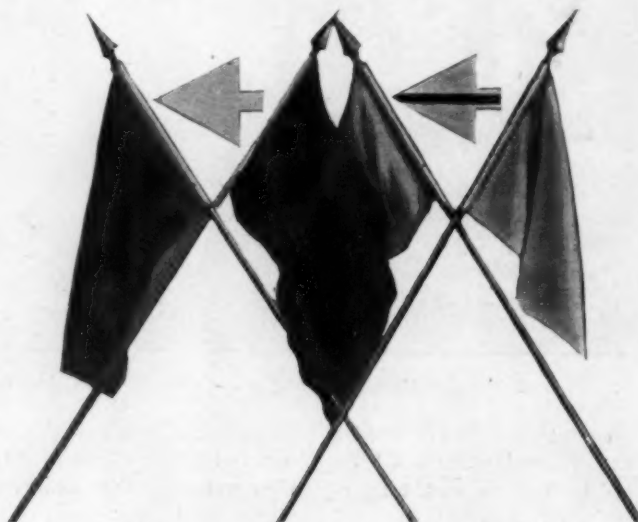
The arrows that indicated the turns on the outward run were of plain metal 14 inches long and enameled all white, while



DISTINGUISHING BADGES.

the return route was indicated by similar arrows having a solid red stripe through the center. These were nailed to convenient posts and trees in conspicuous places with the points turned in the direction of the necessary turns to be made.

The flags were of bunting, in solid colors, 18 by 30 inches, attached to 3-4-inch poles 8 feet long. As a warning to reduce speed to the legal limit of 8 miles in built-up sections of towns in New York State, to 10 miles in towns in Massachusetts, and to 12 miles in towns in Connecticut, green flags were posted on the right hand side of the road at or near the edge of the towns or were waved across the road by a man stationed there to more emphatically call the attention of the contestants to the requirements as they entered the built-up sections. White flags similarly placed at the other limit of the built-up section showed where the regular speed might be resumed. The all red flags, nailed to trees or telegraph poles, marked the close proximity of the noon and night controls, and similar red flags, bearing the word "Con-



ROAD FLAGS AND ARROW MARKERS.





R. M. OWEN'S OLD-MOBILE ON THE ROAD.

trol" in black diagonally across them, were planted at the point where the official timers and checkers recorded the arrivals and departures.

Four different buttons 1 3-4 and 2 inches in diameter, were issued respectively to the contestants, observers, mechanics and

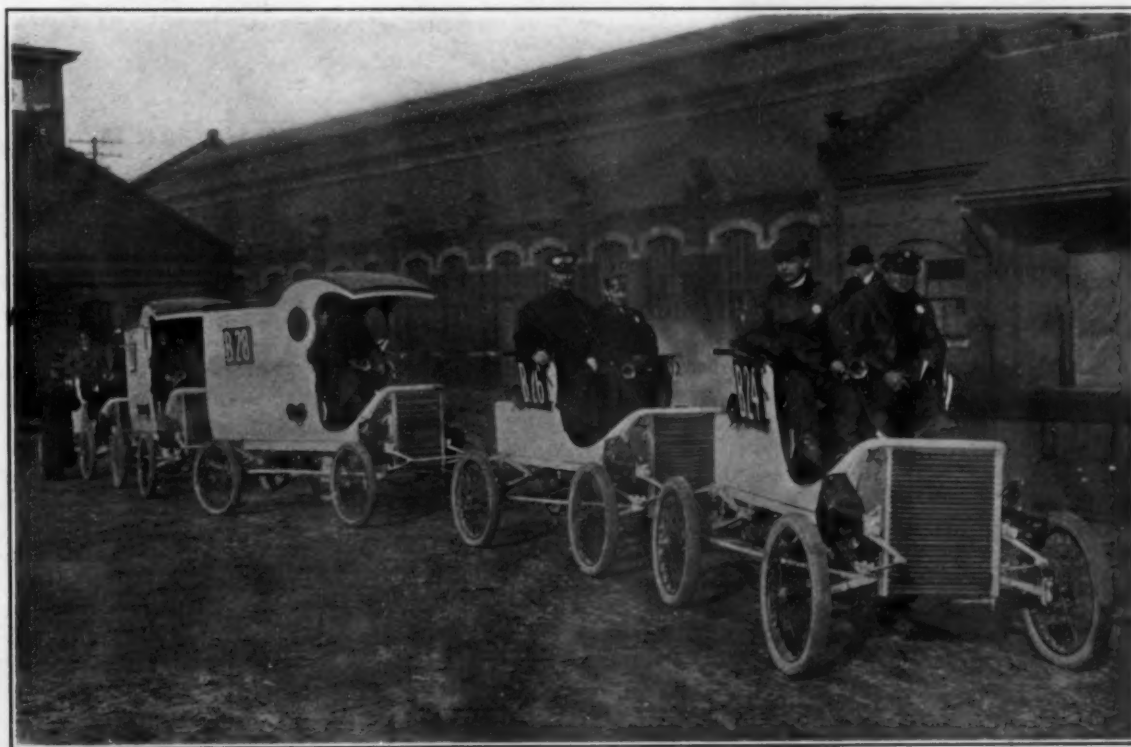
to the press. The first three bore numbers coinciding with the big figures painted in black on a white background of cloth stretched over a light wooden frame which each car carried attached conspicuously in front and aft, or on both sides. The buttons were printed in black on a white

background, except the mechanic's button, on which the word "Mechanic" appeared in red. All of the buttons were covered with celluloid and provided with a brass pin at the back for attaching to the coat or cap.

With the exception of Starter Thayer, all of the timers and others having road duties, wore red flannel automobile caps. Mr. Thayer was distinguished by a white leather cap.

The arrangements were all that could be desired and the only confusion resulted from the mischievousness of small boys and college students who removed the signals and arrows in some places, and because of the darkness prevailing during the late arrival of the contestants at Boston.

One addition to these arrangements might, however, very well be made in future contests with the object of giving the contestants full credit for their enterprise and creditable performances and at the same time avoid giving the contest any of the appearance of an advertising scheme. It was observed that many spectators along the way were much interested in the different machines, but were able to distinguish by name only a few with which they were already familiar. If the club had mailed to each of the local newspapers in the towns through which the procession was to pass, a sheet bearing the numbers of the vehicles together with the names of the makers and the operators, the list would have been published by them and the event would have proved of much more immediate instructive value to onlookers.



WHITE RUNABOUTS AND WAGONS IN CHARACTERISTIC POSITION BEFORE THE START FROM BOSTON.

## TWO DAYS' SLOW RACING | BY THE CHICAGO CLUB.

### LOCAL MOTORISTS HOLD BACK.

Slow Track and Small Attendance Make Uneventful First Day, Despite Numerous Speedy Machines—Handicap Runs Predominate—Laurels for Wintons, Oldsmobiles, Hagaman & Hammerly and Autocar.

#### Staff Correspondence.

CHICAGO, Oct. 18.—After months of planning and preparation and a double postponement, the second annual race meet of the Chicago Automobile Club, given yesterday and to-day at the Harlem race track, proved only a moderate success. Many of the races were interesting, but many also were not and the lack of extremely fast times and furiously fought contests robbed the occasion of enthusiasm. There was little, if any, disappointment over the fact that the attendance was not large and profitable, as the club officials were without intention to make money from the event, the chief consideration being the promotion of the sport of pure amateur automobile racing in this vicinity.

The main disappointment, especially on Friday, was the lack of sufficient contestants in many of the races to make them exciting. This was due to the fact that numerous speedy eastern machines were not on hand. The entrants were classified in the events to afford spirited contests had there been enough in each race. The mediocre quality of much of the racing was palpably due to the lack of real sportsmanship among a large number of local automobilists who drove their machines into the yard and then walked out toward the track, there to saunter about looking for chances to remark upon the character of the contests. Even among the entrants were many who did not start and the racing of the first day was principally made by a few local automobilists of the true sportsman variety, willing to take a chance either at losing or winning. These were helped out by Messrs. Mooers and Shanks, of Cleveland, with the Peerless "Yellow Kid" and Winton "Pup," respectively.

#### TRACK SMOOTH BUT HEAVY.

The track, owing to frequent recent rains, was heavy and though fairly smooth near the pole was too soft and springy to make fast time possible. For instance, Mr. Shanks' machine, which had repeatedly run miles in 1:15 and less on the Glenville track at Cleveland, was unable to get within 15 seconds of that time.

To-day's events were more interesting than those of yesterday owing to the larger number of starters in each. The attendance, however, was hardly as large, but was creditable because representing the desired element of local society.

Those in charge of the meet worked creditably both before and during the days of racing. Especially to their credit

was the prompt manner in which the races were run, there being little delay between the events. Summing up the meet, it was orderly, creditable to the sport and probably of value in attracting local interest to such racing. The deficient element was excitement.

#### RACES IN FRIDAY'S PROGRAM.

The most interesting races of Friday's program were the 5-mile handicap and a special 5-mile match race between L. P. Mooers and C. B. Shanks. The former was the fastest event of the day.

The first race was a special handicap in which Frank X. Mudd, with a Winton touring car, gave J. B. Burdett and J. E. Stevens, with their Oldsmobiles, each 3 minutes start in 3 miles. Mudd caught Stevens with comparative ease, but was unable to overhaul Burdett, who won with room to spare.

The first regular event, a 3-mile invitation gasoline for Oldsmobiles, was a close race between J. B. Burdette and D. B. Huss. The third contestant, P. W. Messersmith, was soon left behind, while the first named ran well together until the home stretch was entered the last time, when Huss ran handily ahead to win in 6:42.

Two local Winton touring cars, driven respectively by John Fry and F. X. Mudd, competed with the yellow racing-touring Peerless of L. P. Mooers in the 10-mile race for gasoline vehicles of the .70 to 1.00 class (meaning .70 to 1.00 horse power per 100 pounds of weight). The Peerless took the pole and lead without delay and steadily drew away from the two Wintons. Of the latter, Mudd gained gradually a short lead over Fry, finishing about 100 yards ahead of him and 7-8 of a mile behind the Peerless, which covered the distance in 17:03.

#### STOCK STEAM CAR RACE.

Dr. L. W. Sheppard, with a Hagaman & Hammerly steam carriage, had no difficulty in winning the 1-mile race for stock steam cars. His only competitors were Sunderland and Sykes, both with Locomobiles. The latter managed to have the burner blaze merrily on the last turn much to the edification of the crowd, which immediately saw prospects of a blazing car rushing toward victory and destruction. The fire was disappointingly short, however, and meanwhile the other pair of steamers had glided serenely past the wire. The time was 1:41 2-5.

Burdett, Oldsmobile, had but one contestant, Dr. F. H. Davis, with a Winton phaeton, in the 10-mile race for gasoline vehicles of the .50 to .70 class, and the race was never in doubt, as the former gained rapidly on Davis and lapped him in the eighth mile. Thereafter the two rode side by side until near the finish, when Burdett jumped ahead to show the spectators how easy it really was. His time was 23:58 4-5.

Closely contested was the 5-mile match race between Mooers and Shanks. During the first mile and as they passed the wire the first time the two machines were almost in line and never during the race were they more than 25 yards apart, by about which distance the little Winton special won in 8:35. The Peerless seemed to lose slightly on the turns.

Stevens, Huss and Burdett, Oldsmobiles, and Robinson, Friedman, started in the Australian pursuit race for gasoline vehicles of the .35 to .50 class. The cars were started at the quarter mile posts. Robinson was out of it at once, as he failed to note the starter's signal and did not know the race was on until the carriage first behind him passed by. Stevens was caught by Huss in the second mile and the latter then went after Burdett, whom he overhauled at the wire after the sixth mile. His time was 12:35.

#### FIVE-MILE HANDICAP.

Wintons were the whole 5-mile handicap. The Peerless did not start and the Locomobile racer, a scratch machine, was disabled just as it started. This left the "Pup" as lone scratch machine to chase the Winton touring cars of Mudd and Fry, each with 1:45 start. Mudd was overtaken in the third mile, but Fry managed to keep out of the way and finished an eighth of a mile ahead of Shanks. The winner's actual time was 9:05 1-5. Shanks' actual time was 7:17, the fastest time of the day.

A special 5-mile race for motor bicycles was the closing event. The starters were Holway, Heath and Charlie Miller, of six-day bicycle race fame, on Orients, and G. H. Gardiner on a Mitchell. Miller won, with Holway second, and Gardiner third. No time recorded.

#### SATURDAY'S EVENTS.

The Oldsmobile fraternity, Burdett, Huss and Stevens, drew up alongside of B. M. Young in a Friedman for the first event to-day—a 5-mile race for gasoline vehicles of the .35 to .50 class. Stevens was lapped by all of the others and the Friedman was left a wide third with Burdette and Huss close together. The latter repeated the performance of yesterday and drew ahead enough to win. His time was 11:13 2-5.

A good line-up of starters gave promise of a splendid race when the 25-mile open for vehicles of all classes was called. The starters were Mudd and Fry, Winton touring cars; Davis, Winton phaeton; Lane, Locomobile; Banker, Haynes-Apperson; Mooers, Peerless, and Shanks, Winton "Pup." It was won easily by Shanks. Fry surprised every one by putting up a hard fight against Mooers and when the latter dropped out in the fourth mile, owing to some difficulty, was an easy second. Shanks lapped Mudd in the fifth mile and Fry lapped both Mudd and Lane in the seventh. Thereafter Shanks and Fry continued the lapping process on the others,



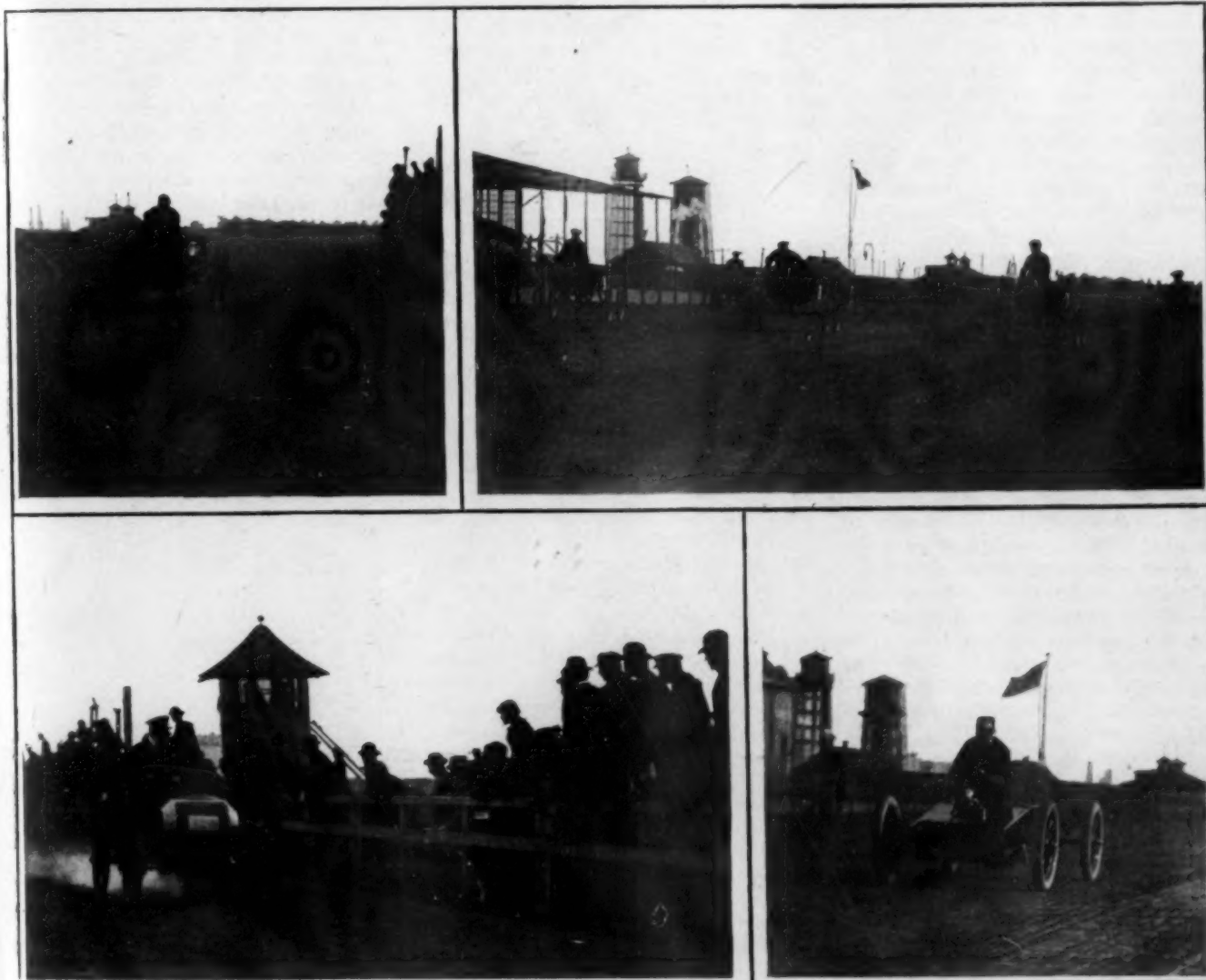
with Shanks gradually gaining a lap on Fry. Davis quit in the seventh mile and the Loco in the tenth. Banker, though hopelessly out of it, stuck with smiling grace to the track, ready to be on hand for third place should one of the others break down. Shanks finished first in 39:38, with Fry second in 41:26.

#### THE FIVE-MILE STEAM RACE.

The Locomobile racer driven by M. Reimers captured the 5-mile steam race. The other competitors were Sunderland's

and Young, Friedman, 50 seconds; Sunderland, Loco, and Barden, Darling, 2 minutes; Ralph Temple, Waverley electric, 3 minutes. The race was pretty, as the back markers did not catch the slower ones easily. The handicapping had been well done and the machines came in close together. The Autocar gained steadily, but did not catch the leaders until near the end of the fourth mile. Banker was second and Burdett third. Huss with his speedy Olds was put out of the race at

Huss, Olds, 3:30; Barden, Darling; Burdette, Olds, and Brianza, Long Distance, 4:00; and Stevens, Olds, 5:00. The Winton "Pup" and Peerless were too heavily handicapped to get inside of sixth and seventh places, respectively, but for all that the race was a good one, there being a hard fight between the small ones for the honor places and equally hard fights between the machines in the two back groups. The Peerless made a good run, Shanks not passing it until the home



Mooers Winning 10-Mile Gasoline Race—.70-.100 Class—Friday.

Sheppard Winning 1-Mile Steam Race—Friday.

Start of 3-Mile Oldsmobile Invitation Race—Friday.

Shanks Winning 25-Mile Open—Saturday.

#### INSTANTANEOUS PHOTOGRAPHS TAKEN AT THE CHICAGO RACE MEETING, HELD OCTOBER 17 AND 18.

stock Loco and Sheppard's Hagaman & Hammerly machine. The former was easily left behind while the latter had to be content with second position throughout. The winner's time was 8:04.

A new winner, Dr. F. C. Green's Autocar, was brought out in the 5-mile open handicap for the small machines. The line-up was Green, Autocar; Sheppard, Hagaman & Hammerly steam; and Huss, Oldsmobile, scratch; Burdett, Oldsmobile, 30 seconds; Banker, Haynes-Apperson,

the pistol shot when his machine jumped viciously into the air and came down with a broken chain. The time was 9:48.

#### INVITATION HANDICAP.

A large invitation 5-mile handicap bringing out twelve starters, was the closing event of the meet. On scratch was Shanks with the Winton "Pup." Mooers, Peerless, had 45 seconds; Fry, Winton touring car, 1:15; Mudd and Farson, Winton touring cars, and Green, Autocar, 2:00; Banker, Haynes-Apperson, and

stretch was entered the last time. Fry easily caught and passed the other touring cars and jumped in among the little early starters. Huss won in 9:55, actual time, with Burdett second and Fry third. The "Pup" barked the five laps in 7:58.

This evening the Chicago Automobile Club gave a pleasant and well attended smoker in its handsome Michigan Avenue club house to officially close the meeting and in honor of the visiting automobilists.

# The Gasoline Vehicle in Detail.

## XIII. RUNNING GEARS, REACH AND REACHLESS.

It has been previously remarked, in the articles on transmission systems, that the early automobile constructors commonly mounted the machinery on a rigid under frame connected with the rear axle, and to which the front axle was pivoted to allow it to accommodate itself to inequalities in the road surface. The object of this arrangement was partly to simplify the problem of transmission and partly to gain a supposed greater freedom from vibration for the passengers. The reduction of vibration, however, proved to be imaginary, since the only essential difference between this arrangement and carrying the motor on the same springs as the body, was that in the former case the motor had little more than its own weight to absorb its vibration, while in the latter case it had the weight of the body, passengers, and tanks as well; so that in the former case the motor set up violent vibrations of the under frame on which it rested, and these caused the body to dance unpleasantly on its light springs. This arrangement has been wholly abandoned by builders of experience, except in a few styles of very light runabouts, where the weight of the motor is much less than that of the body and passengers, and the disadvantage of supporting it on the wheels is offset by the greater efficiency of the direct transmission thus made possible. In all ordinary cases, however, the dead weight of the motor and speed changing gears has been found to be very destructive to frame, wheels, and tires, with no compensating advantages worth consideration. The accepted arrangement by which one set of springs bears all the weight except that of the wheels and axles themselves, plus that of the reaches if any are used, is the only one which will here be discussed.

### SURVIVAL OF THE UNDERFRAME.

As has before been hinted, the present tendency is toward the abandonment of reach connections between the axles, in the gasoline vehicle, but the underframe, stripped of its early function as a carrier of the machinery, and lightened as much as is compatible with its remaining function as a flexible connection to keep the axles parallel, still survives in the majority of steam carriages, with a fair degree of following among the builders of the lighter gasoline machines. It therefore merits brief consideration.

To begin with, whatever form of running gear is used must allow the wheels freedom to accommodate themselves to the vertical irregularities of the road. Secondly, it must permit the axles to do this without material loss of parallelism between them; or, if the axles themselves do not remain parallel, the front wheels must still remain

parallel with the rear wheels on a straight course, and when deflected must not change their angles of deflection, whatever the motion of the axles, so long as the steering gear itself is not shifted. Otherwise a rough road will render the steering uncertain. Again, flexibility of the running gear, in the direction of successive yielding of its members under impact, and the distribution thereby of road shocks throughout the whole system, as against their concentration in any single rigid and unyielding member, is very desirable so far as it is compatible with precision of steering, as it reduces the amount of weight needed and conduces to the long life of the machine.

### STABILITY A REQUISITE.

Coincident with these requirements is another, namely, that the design of the running gear and the system of spring suspension used shall not be such as to impair the stability of the machine or to necessitate a weight distribution unfavorable to accurate steering or to traction. This last requirement practically prohibits the use of a single front or single rear wheel, since in order to give a three-wheel machine stability on curves, nearly all the weight must be carried on the two rear (or front) wheels, rendering the steering uncertain, or, if a single rear wheel be the driver, making it impossible to combine traction with stability.

To this same objection on the score of stability some forms of spring suspension are more or less open, particularly the transverse front elliptic spring, which permits an undesirable rocking of the body, and is losing its popularity. To a somewhat less degree the reversed elliptic or X transverse spring has the same fault, and also the plain half elliptic transverse front spring used in the new Panhard machines. In these cases the argument in behalf of these springs, that they permit, as they undoubtedly do, a freer vertical movement of the front wheels relatively to the body, must be weighed against the fact that the sides of the body receive less support from these springs when swinging around curves than is afforded by the semi-elliptic side springs, used in the great majority of gasoline cars. It would seem that the preference should be largely a matter of the roads on which the car is to run and its intended speed, and that the transverse spring might be better for very rough roads and slow speeds.

It is frequently held that the French system of four side springs, of which the Mors car, previously illustrated, is a good example, is too stiff for very rough roads, and racks the main frame unduly. While this may be true in extreme cases, it would probably be nearer correct to say that the

springs of French cars are made somewhat too flat to give the play needed on American roads, and that a relaying of the springs would usually cure the difficulty. At the same time it must be borne in mind that, in the absence of reaches, the front axle is held in position solely by the front springs, and that if these are much bent, the straightening of one or the other of them in compression will throw that end of the axle back of the other. This is liable to derange the steering unless special provision be made for it. The best plan is to make the front springs long enough to give the needed play with but a small curvature, and then build them up to get the required stiffness. When this cannot be done, a very good plan is to have the connection from the worm sector or its equivalent run to a bell crank pivoted at the center of the front axle, instead of to one or the other steering knuckle. Thus the effect of backward motion of one end of the axle, as concerns the steering, is divided by two.

### EFFECT OF SPRINGS ON STEERING.

As implied in the foregoing, disturbance of the steering gear from these causes may be avoided entirely by the use of a suitable design of underframe; and if there were no other consideration involved it would doubtless be well to adopt it in all cases. Practical experience, however, has shown it to be unnecessary to successful steering if the springs are properly designed; and any connection between the axles is open to the objection that it possesses a certain amount of undesirable rigidity in lateral and fore and aft directions. The springs to which the front axle is attached will determine its vertical motion in a manner hardly distinguishable from that due to the reaches; but the motion will be less harsh, and vertical oscillations of the front axle will not jerk the front end of the body from side to side as much as with the underframe, particularly an underframe to which the front axle is swiveled at its center. Broadly speaking, the trend of practice to-day is all toward the abandonment of the reaches; and it is not yet demonstrated that any form of front spring suspension is superior to the well tried semi-elliptic side springs. If these are deemed undesirable as being too stiff, it may be questioned if it is not better to compromise on platform springs, the side springs being retained, but having their rear ends connected to a transverse spring, rather than to adopt the transverse spring pure and simple.

As regards the rear springs, there is more legitimate scope for variety. If proper provision is made for adjustment of the chain, full elliptic side springs may well be used on rough roads, while by some builders platform springs are considered very meritorious. The decision here will frequently depend on the permissible length of the spring, the semi-elliptic springs being preferred.



## Correspondence

### Train Runs Down Automobile.

Editor THE AUTOMOBILE:

Sir:—I am sending to you a photograph of a 12 horse power Packard car taken after it has been sidwiped by an Erie passenger train, which was going fifty miles an hour, near the limits of this city. The car, containing Messrs. Harry Tod, Frank Silvers and Harold Stitt, all connected with the Brier Hill Iron & Coal Co., of Youngstown, left the office of the Republic Rubber Co. on the afternoon of Wednesday, October 8, about 4 o'clock. The road leading from the rubber works runs parallel with the Erie tracks for about one-eighth of a mile, where it turns sharply to the left and crosses the tracks on grade. The tracks are about four feet higher than the average level of the road, and are approached by a slight incline, possibly 30 or 40 feet long. I happened

Neither of the survivors had any idea that they were in danger until the locomotive struck them. They were talking together as they approached the crossing, and they could not see it, as a way station and a small tree obstructed their view.

When I saw the locomotive hit the car I hurried to the telephone for medical help, and then ran to the crossing, but Mr. Tod was dead and there was little we could do. Harry Tod was a grandson of Ohio's famous war governor.

The machine was badly smashed up and hurled down into the culvert, where it is shown in the photograph.

HYLAND BURTON.

Youngstown, O.

### An Outing in the Rockies.

Editor THE AUTOMOBILE:

Sir:—Just a few lines in behalf of the vehicle of the twentieth century.

The writer possesses an Oldsmobile, which has been run over four thousand miles. Chancing to have a few days for

down grade, we looked down, however, and came back to earth with a jolt. Then we came to Beaver Creek, which, as a matter of "luck," was laid with rocks. We crossed with difficulty; then down, down, we went, until we crossed the river and entered Florence, where we replenished our gasoline and water tanks and leisurely viewed the city. Off again for Canon City, to which lead an up-grade road, but the Olds took it coolly, and Canon was reached in a short time. We were much taken up with Canon City and decided to return there for a couple of days. We oiled up and facing the mouth of the canon, made for the mountains, in the midst of which we pitched tent. That night we made our beds with care and slept refreshingly. Fortunately, while passing a high stone wall at the tail end of Canon, we were not delivered into the hands of the State "pen" officers, since I am sure every part of our make-up likened us to the escaped stripes.

Next morning we decided to view a little of the boulders. We very shortly pulled over nine miles of range, and ran nine miles more up such grade as would seem impossible to climb. Here we imbibed the "greatness of this world," and turned back for Canon City, where we stayed two days.

Our return trip was straight for our starting point. Not passing through Florence we came "a sailing" until we reached the foot of "Heaven's antonym," and looking up, we thought sure we could never anywhere reach a point higher than the top of that grade. We stopped to oil, coaxed little "Olds" a bit, turned the crank, put on the clutch and up we went as though a locomotive were back of us, or the supposed occupant of the place we had just left. After making that climb we took luncheon as we went and were refreshed for the remaining few miles. Our gong sounded to the ears at home at 7:45 P. M., making the trip in 4 hours and 15 minutes, a distance of 42 miles, over roads which he alone can appreciate who has made a road trip to the Rockies.

The water jacket pet-cock struck a stone and was snapped from its socket. This was repaired at Canon and constituted the only accident of the trip.

HENRY B. OERTEL.

Pueblo, Col.

### Exports for August.

During the month of August, 1902, the latest period for which the official figures have been compiled by the Treasury Department, the exports of automobiles and parts of the same reached a valuation of \$71,907, as compared with \$56,300 in August, 1901.

During the eight months ending with August, 1902, these exports amounted to \$786,137, against \$128,702 during the corresponding period ending August, 1901.



PACKARD TOURING CAR AFTER COLLISION WITH AN EXPRESS TRAIN.

to glance out of the office window and noticed the car as it approached the crossing. They were going at a pretty fair rate of speed, and as they turned to mount the slope leading over the tracks they apparently threw on all speed. The car had scarcely reached the track before the train was upon them, and before they could do anything to save themselves, or even before the engineer could blow his whistle, the locomotive had crashed into the car with terrible force, hurling it off the tracks and its occupants a distance of fully 30 feet. Mr. Tod was on the side the locomotive struck and was instantly killed. Mr. Silvers was at his side, and strange to say, escaped without a scratch. Mr. Stitt, who was on the rear seat, suffered only from being thrown heavily to the ground, and with such force as to drive small particles of cinders deep into his flesh.

a vacation, I decided to take a run in my machine a little northward of Pueblo, a gentleman acquaintance in company. We loaded with a small "miner's tent," a gun, a few blankets, auto supplies and victuals. At 5 P. M. we left my residence, going twelve miles when rain caused us to pitch tent—in a hurry, sure—and we slept as men usually do—I imagine—in a fifteen-cent lodging house. Next morning—roads being fair—we oiled and loaded our machine and made a start, arriving at Turkey Creek in about an hour. There we found the main road washed out of existence; following tracks around we beheld a high ditch, which was bedded with deep sand. Losing no time we built two tracks of rocks and crossed over like going through the air. Then we struck a plain, crossing which was like traveling the roads of Paradise. When we came to a

## Foreign

### AWARDS DISTRIBUTED IN THE BRITISH RELIABILITY TRIALS.

#### AMERICAN STEAM CARS WIN OUT.

French and English Gasoline Machines Divide Honors  
—System of Awards by Points According to  
Opinions of Judges Raises Many Questions—Con-  
dition of Vehicles Considered.

Staff Correspondence.

LONDON, Oct. 11.—After the deepest and most earnest consideration the judges in the Reliability trials have made their awards. I have no doubt but that much heart burning and recrimination will ensue, but speaking as one who knows nearly all the competing makes thoroughly and also as one who followed the trials day by day on one or other of the cars running, I think the judges have come very well out of the ordeal; and, so far as unprejudiced critics go, have discharged their onerous and by no means thankful task in a highly praiseworthy manner. It will be a matter of surprise to those who kept abreast of the performances of the cars and followed the marks awards for brakes, condition after trial, etc., to discover that in the list given hereunder is no mention of the 5 horse power Baby Peugeot. It is believed that mention of this excellent little car is withheld owing to a suspicion that the car run in the trials by the English agents was not just as the 5 horse power Peugeots offered by this agency to the public. I cannot myself say whether this is or is not so. Certainly, from a cursory examination of the competing car as she stood in the club garage at the Crystal Palace during the trials, I did not mark any striking difference. But a difference which would affect the performances of the car in the way of improving them would be a little extra diameter of cylinder and a little extra stroke. Of course, the car may have been specially finished and prepared for these trials, but if that was so, I am at a loss to see how this could be determined by the judges, unless they made a descent upon the agent's depot and there made a narrow inspection of the Baby Peugeots in stock.

#### HONORS FOR AMERICAN CARS.

Those of my readers who feel a pride in the success of American cars on this side will note with pardonable pride that between them the two 5 1-2 horse power Locomobiles run in Class B have gained first prize for their class, in the shape of one gold medal.

In Class C, a special extra silver medal is awarded to No. 29, the 6 horse power White steam car so ably driven by Walter C. White. This award is made for novel features in construction and general excellence. I am of opinion that had

the White steam cars been fitted with two independent brakes, that is to say, one drum brake applied by foot pedal, and two band brakes on road driving wheels applied by side hand lever, a gold medal would have been awarded. I believe that W. C. White intends to claim a higher award from the A. C. G. B. & I. if the lower one has been made only on the above mentioned grounds, on the contention that his cars actually possess another brake, and that a particularly powerful one, in the shape of reversed engines. If this claim is made, I fancy it will be met with the suggestion that such breaking must pass through the driving chain, which may jump off the sprockets or break, unusual things to happen, by the way, but nevertheless possibilities.

An award which will come to the firm benefiting like water in the desert to a thirsty man is the allocation of a gold medal to the Motor Manufacturing Co. for the behavior and condition of their 8 horse power Voiturette, particularly as they had shocking luck with their 20 horse power car in another class. The awards in all the classes, particulars of each of which you have already presented, are as follows:

#### SECTION I.

Class A: 1st prize, gold medal, No. 1, the Humber Co.'s 3 horse power motor bicycle; 2d prize, silver medal, No. 4, the Century Co.'s 5 horse power Century tandem.

Class B: 1st prize, gold medal, No. 10 and No. 9, the Locomobile Co.'s 5 1-2 horse power Locomobiles; one medal between the two.

Class C: 1st prize, gold medal, No. 8, the Motor Manufacturing Co.'s 8 horse power Voiturette; 2d prize, silver medal, No. 24, the De Dion-Bouton Co.'s 6 horse power De Dion Voiturette.

In this class an extra silver medal is awarded to No. 29, 6 horse power White steam car, for novel features and general excellence.

Class D: 1st prize, gold medal, No. 41, the Wolseley Co.'s 10 horse power car; 2d prize, silver medal, No. 47, the De Dion-Bouton Co.'s 8 horse power De Dion light car.

Class E: No gold medal awarded in this class.

First prize, silver medal, No. 59, the Motor Traction Co.'s 7 1-2 horse power Germain light car.

Class F: 1st prize, gold medal, No. 64, Messrs. Fuswell, Ltd., 10 horse power Peugeot car; 2d prize, silver medal, the Speedwell Co.'s 6 horse power Gardner-Serpollet steam car.

Class G: 1st prize, gold medal, No. 69, the Wolseley Co.'s 20 horse power car; 2d prize, silver medal, No. 74, the Motor Traction Co.'s 15 horse power Germain car.

Class H: No gold medal awarded in this class. First prize, silver medal, No.

76, the Daimler Co.'s 12 horse power car.

Class J: 1st prize, gold medal, No. 84, Baron Henri de Rothschild's 20 horse power Pascal car; 2d prize, silver medal, No. 82, the Maudsley Motor Co.'s 20 horse power Maudsley car.

Class K: 1st prize, gold medal, No. 88, Messrs. Panhard & Levassor's 15 horse power Panhard; 2d prize, silver medal, No. 86, the Daimler Co.'s 22 horse power Daimler car.

#### HIGH-RECORD CARS.

So far as it is possible to arrive at the highest score, viz., by taking the maximums set down and adding thereto the highest marks attained by any car in the hill climbs, and by the horse power calculation, the total obtainable by any and all means appears to be something round 3,310 points. The vehicle scoring nearest points to this total is the 10 horse power Peugeot, which has 3,313 set down to its credit. This car is followed by the 15 horse power Panhard, with 3,089, after which comes the 5 horse power Baby Peugeot with 3,057, then the 22 horse power Daimler with 3,032, followed close by the 20 horse power Wolseley with but two points less. After the marks sunk below 3,000, many cars are very close and in this batch the large majority are English cars.

#### STEAM CARS ON THE HILLS.

It should not be forgotten on your side that the horse power computing formulæ was more or less aimed at handicapping the steam cars on the hill climbs, whereat in previous competitions they have shown up so well. Of course, the steam cars, particularly the Locomobiles, are specially driven for hill climbs, in particular by a wonderfully smart driver named Ginder, who is currently reported, in automobile circles on this side, to fire up to 800 pounds to the square inch before he lets himself go at hills of this description. This is, of course, equivalent to the riding of a crack race horse by a Tod Sloan, and far from achievable by any common or garden person who lacks desire to be hurled heavenward before his appointed time.

It will be remarked that both the Gardner-Serpollet steam cars have scored more points than the Whites or the Locomobiles, but the advance is acquired by the French steam cars in the marks obtained for horse power, steering and condition. In the latter one G. S. obtained the maximum 500, while the other scored but 5 points less.

Both White steam cars obtained 500 for condition, in which the Locomobiles came rather badly off, but where both Whites and Locomobiles lost so much ground to the Gardner-Serpollets was in the horse power awards. The four Locomobiles scored 99, 79, 73 and 89, respectively, the Whites 72 and 67, while the French steamers put on 204, 201 apiece, their weight and small fuel consumption giving them the advantage in this particular.



## A BATTLE OF THE STEAMERS.

A very pretty little fight is raging just now in the columns of *The Autocar* between the firm which handles the Weston steam car (the Grout with you), and the Locomobile folks. The Weston people assert that had they understood that additional tanks could be added for the test, provided they were ready to supply cars with facsimile tanks to the public, they would certainly have whirled in to the trials and measured the Westons against the Locomobiles. The Locomobile Co., ably represented by its managing director here, Mr. Letts, has replied by quoting the rules, under which he shows conclusively that he was perfectly within his rights in doing as he did, and these rules run as follows:

## PRICE.

A competitor in Sections I and II, in entering, shall state the price at which he guarantees to provide to the public exact duplicates of the vehicle or part entered for trial, provided that the order be received before the 1st of December, 1902, with a deposit of one-third of the value.

The classification for privately-owned cars shall be (a) if the vehicle is made in the United Kingdom, by the manufacturer's list price; (b) if it be made abroad by the list price of the authorized agent in this country, or failing that, the actual price paid by the purchaser to the seller.

## ENGLISH SPEED REGULATIONS.

In this country as in many others legislators are given to legislating in haste and repenting at leisure and this is undoubtedly the case in connection with the irrational speed limit under which we languish. The Rt. Hon. Henry Chaplin, who is responsible for the utterly idiotic local government board regulations, tacked on to the permissive Act of 1896, has himself acknowledged in a speech made in the House of Commons that the regulation was an absurd one and that he had in his own person again and again broken his own law. The very prime minister, the Rt. Hon. A. J. Balfour, who drives a 9 horse power Napier, and has ordered a 16 horse power Napier because the 9 horse power is not fast enough for him, habitually breaks the law when motoring, for the simple reason that you can't drive a 9 horse power Napier within the legal limit if you want to without much discomfort. Nevertheless a set of purblind antiquities, who reek of the stable and own but one god—the horse—and who by ancient usage are appointed administrators of the law, continue to persecute automobilists with a blind fanaticism which would have gone far to shame the inquisitors of old Spain.

On the occasion of his recent visit to Paris the Shah of Persia purchased four motor cars of de Dietrich make under the Turcat-Mery patents, and they will be delivered so as to be ready in Teheran on his return home. Following the imperial example, Mahmoud Khan, Minister of the Court, also purchased two of the same vehicles.

NINETY MACHINES CLIMB  
CROOKED HILL ALL DAY.

## HEAVY CARS BEAT MOTORCYCLES.

Light Motor Bicycles Make Steep Kilometer in Fifty-Odd Seconds, But More 60 Horse-Power Racer Drops Record to 48 2-5—Fitted With Special Direct Drive Pinion.

## Special Correspondence.

PARIS, Oct. 10.—A glorious sun, 10,000 excited people lined up along the road, which overhangs the pretty Marne Valley, to see the 80 fine monster automobiles dashing up that terrific kilometer known as the Chateau-Thierry Hill; all the records for the course smashed, and no accidents to either men or machines—such is the story in a nutshell of one of the most successful contests of a most successful season.

The hill is a fine gradient, beginning at the River Marne in a 3 to 5 per cent. rise and passing up between rows of houses by paved streets and then changing to macadam at an increasing grade, reaching a maximum of 9 1-2 per cent. just at the crest, where the road emerges upon the plateau. From about the half-way point to the top there are two awkward bends, making the Chateau-Thierry Hill a particularly trying course, supposed to be much more difficult than the Gaillon Hill. It affords a crucial test for the vehicles, which must show their best speed from the first to the last yard, and is a rare test, too, of the nerves and good judgment of the operator, since the slightest mistake in the showing is bound to lose the race.

Although 150 cars and motor cycles were entered for the contest, only 90 appeared to take part, but this number was sufficiently large to make the trials last all day. The motor cycles and voiturettes were sent off in the morning, while the afternoon was reserved for the heavier four-wheeled vehicles. These trials were really only the first of two, as the prizes are to be awarded upon the added times made in the trials of September 28, and others made on Gaillon Hill on Sunday, October 5.

## PERFORMANCES OF MOTOR CYCLES.

The contest was opened by Barré, on a Bruneau bicycle, who made the kilometer ascent in the excellent time of 1:00 1-5. This time was promptly beaten, however, by Lamberjack, who, on a big Griffon bicycle, driven by a Soucin motor, covered the course in 55 4-5 seconds, the best time of the day for the motor cycle class. Carreau, riding a machine of his own make, in the same class of machines, weighing from 30 to 50 kilograms (66 to 110 pounds), tied the time made by Barré, while Dunester, riding a Griffon, ascended in 1:01 1-5. Robin (Lamaudiere) and Labitte (Werner) required respectively 1:18 2-5 and 1:22 3-5 to do the trick.

In the class for motor bicycles weighing less than 30 kilograms (66 pounds), the best showing was made by the two cylinder Clements, ridden by Dery, 1:03 1-5, while the second best time was more than half a

minute longer (1:34 4-5), also made on a Clement by Muller. It was a Clement, also, ridden by Halley, that made the second best time in the class for motor cycles weighing more than 50 kilograms (110 pounds); but its time of 51 3-5 was beaten by Loste on a Buchet 12 horse power tricycle, who made the ascent in 49 1-5. Osmond on a De Dion-Bouton 8 horse power tricycle, using alcohol for fuel, made the third best time of 55 seconds in this category. Rigal, with his 20 horse power Buchet tricycle, was expected to do something sensational, but a slight accident to the machine prevented him from reaching the top. A number of motor bicycles came to a standstill on the turn and the motors could not be started again.

## GOOD VOITURETTE TIME MADE.

The best performance in the class for voiturettes, weighing from 250 to 400 kilograms (550 to 880 pounds), was that of the 16 horse power Passy-Thellier car, fitted with Buchet motor and driven by Thellier, whose time was 58 1-5 seconds for the kilometer ascent. This machine, which made its public debut in the Deauville speed trials, has made a very creditable showing in the subsequent races and other contests. The next best performance by voiturettes was by Volatum, in a 12 horse power Clement, whose time was 1:14, or 15 4-5 seconds slower. Other times were 1:19, by Hauariat in a 16 horse power Passy-Thellier; 1:30 by Oury, in a 12 horse power Clement; 2:04 by Gombier, in a 12 horse power Georges-Richard, and 2:21 4-5 by Ginder, in a 4 1-2 horse power Locomobile.

## THE AFTERNOON TRIALS

The trials of the light carriages and heavy machines were opened in the afternoon by Barras, with a 20 horse power Darracq, in the class weighing between 400 and 650 kilograms (880 to 1,430 pounds). His time of 54 1-5 seconds was the second best for this category, being beaten only by Rigolly, in a 20 horse power Gobron-Brillé, who cut 2 1-5 seconds off of Barras' time. Another Darracq of 20 horse power, operated by Edmond, made the third best time of 56 3-5. There was a wide range of times for the other competitors, whose performances were as follows: 4—De la Touloubre, Clement, 20 horse power, 57 1-5; 5—Barbaroux, Decauville, 16 horse power, 57 3-5; 6—Théry, Decauville, 20 horse power, 59 2-5; 7—Duray, Gobron-Brillé, 16 horse power, 1:05 1-5; 8—Rutishauser, Gardner-Serpellet, 12 horse power, 1:06 2-5; 9—Uhlmann, Decauville, 20 horse power, 1:10 2-5; 10—Barrier, Georges-Richard, 20 horse power, 1:14; 11—Milot, Peugeot, 20 horse power, 1:16 3-5; 12—Ravenez, Decauville, 20 horse power, 1:17 3-5; 13—Compte du Bois, Delahaye, 20 horse power, 1:17 4-5; 14—Deckert, Deckert, 24 horse power, 1:21 2-5; 15—Perrin, Delahaye, 16 horse power, 1:21 4-5; 16—Primez, Delahaye, 16 horse power, 1:45 2-5; 17—Dr. Meliver, Delahaye, 20 horse power, 1:53 1-5; 18—Valentin, Ader, 16 horse power, 1:54 2-5; 19—Men-

ard, Vinet, 12 horse power, 1:55 4-5; 20—Richmond, Ader, 16 horse power, 2:14 1-5; 21—Gasté, Automotrice, 9 horse power, four seated, 3:16 4-5.

#### MORS WINS IN HEAVY CLASS.

The best time made in the day's trials was that of Gabriel in a 60 horse power Mors, who covered the course in the excellent time of 48 2-5 seconds, better by 4-5 of a second than the performance of Loste on his 12 horse power Buchet tricycle. The second best time in the heavy-weight class—from 650 to 1,000 kilograms (1,430 to 2,200 pounds)—was made by Serpollet, in a 16 horse power Gardner-Serpollet, whose time was 49 4-5. Two 70 horse power Panhards, driven by Teste and Heath, respectively, did the kilometer in :52 4-5 and :53 1-5. The times of the remaining contestants were as follows: 5—Angièrès, Mors, 60 horse power, :54 3-5; 6—Durand, Mors, 60 horse power, :56 4-5; 7—Andre Axt, Panhard, 60 horse power, :58 2-5; 8—De Bignieres, Mercedes, 60 horse power, 1:06 3-5; 9—Efgey, Panhard, 60 horse power, 1:09 3-5; 10—Brazier, Georges Richard, 40 horse power, 1:15 1-5; 11—Tourand, Brouhot, 20 horse power, 1:19 1-5; 12—Durand, Mors, 60 horse power, 1:30 1-5; 13—Charrin, Fouillaron, 30 horse power, 1:34 2-5; 14—Jousse, Fouillaron, 30 horse power, 1:40; 15—Mercier, Gladiator, 30 horse power, 2:09 3-5.

The Mors in which Gabriel won the contest in the heavy car category, and the Gobron-Brillé that Rigolly drove to victory in the light carriage class, both won with direct drive on the high-speed gear, the motors being of lower power than those in many of the competing machines, both Gabriel and Rigolly having tried the hill previously and adopted pinions that permitted driving at top speed all the way up.

#### Circuit des Ardennes.

The Ardennes district, used for the first time this year, has proved so admirably adapted to road racing that it is now proposed to make the Circuit des Ardennes an annual fixture. Means will be taken before next year to remedy such defects as now exist; the department of roads and bridges will improve the sharp turns, notably that at Bastogne, and a special committee of the local authorities will have charge of the entertainment of the large number of contestants and spectators attracted by the event, avoiding the difficulties experienced this year. The touring division, with all other non-competing vehicles, will be rigidly barred from the road during the racing hours and it is probable that the heavier cars will be tried in the morning and the lighter vehicles in the afternoon. The timing arrangements will be further perfected and nothing will be omitted which will add to the convenience of the contestants and the excellence of the course.

## MOTOR BOATS

### SMALL FAST LAUNCHES.

Yacht Tender Built at West Mystic Shows a Speed of 10 Mile.—Bui der's Data.

#### Special Correspondence.

NEW LONDON, CONN., Oct. 18.—Speed launches of great power depending upon special machinery and special construction of hull are quite common along the coast and on the great lakes, but a boat of generous width and with an engine developing almost minimum power that can do better than 10 miles is a rarity. In this latter class a little yacht tender constructed by the Holmes Shipbuilding Co., of West Mystic, must be awarded a position at the top of the list, or very nearly the front. Here is a 16-foot craft with a 21-2 horse power two-cycle motor that has done 10 miles over a measured course, and under ordinary conditions—surely a remarkable performance.

The accompanying illustrations show the boat under full headway in charge of C. H. Holmes. Her dimensions are:



HOLMES MOTOR BOAT.

Length over all, 16 feet; breadth, 4 feet 4 inches; draught, 7 1-2 inches. She has an oak frame, is planked with 3-8-inch cedar, mahogany transom, and deck of pine and mahogany. The cockpit is unusually large for a boat of her size, and she will carry six persons without crowding. She is equipped with a Lathrop motor turning a 14-inch two-blade propeller between 600 and 650 times a minute. The broad torpedo-boat type of stern gives the longest, straightest and easiest fore-and-aft lines possible, and this type of stern prevents the boat squatting, when running at comparatively high speed.

In a recent trip from New London, after a run around the docks in this port, the boat made the distance of about nine nautical miles to Mystic, under not altogether favorable conditions, in one hour and nine minutes. Mr. Holmes is positive that he can do the distance in less than an hour with wind and tides about right.

It can be easily computed that this type of boat means a saving, not only in first cost, but in daily operating expenses, fuel and oil. Then she is a very able boat.

her long, straight floor and bilge, carried out to the extreme length at stern, gives her greater stability than any of the old type of boats. The Holmes company is now building a launch on the same general plan of the yacht tender, the craft to be 27 feet over all, with 4 feet 8 inches breadth, and she is expected to outrun anything of her size in this section.

J. W. Lathrop, the marine motor builder of Mystic, has had no occasion to curtail the output of his shops since the close of the season. Among recent installations are a 15 1-2 horse power motor in the launch *Wizard*, of New Haven, and a 9 1-2 horse power motor in the sloop yacht *Spray*, also of New Haven. The *Wizard* is a 42-foot launch of the modern pleasure type.

Frederic S. Nock has just closed a contract for a speed launch 38 feet long that is to be equipped with a motor developing about 48 horse power. The order comes from Coldwater, Mich., and the boat is to be finished and delivered by March next.

#### Motor Boat Notes from New Haven.

##### Special Correspondence.

NEW HAVEN, CONN., Oct. 20.—Webster Cleave, of Fair Haven, has had built at City Island a 30-foot gasoline launch fitted with two 6-horse power motors and named the *Undine*. She is a fast boat of fine model and has a fine cabin. She has a large main saloon, which can be divided with plush hangings into smaller apartments when desired. The kitchen is aft of the engines at the stern of the boat. The *Undine* will go to Florida the coming winter.

The Savin Rock fleet of motor boats, bound for Florida, will get away November 1, it is expected. Captain Eugene McKenna is having a gasoline engine put into his boat at Mystic for the trip.

S. A. Douglass, of New York, has joined the Hartford Yacht Club, taking his new and fast 42-foot launch with him. The boat has been constructed for speed and is a flyer. Fleet Surgeon Axtelle, of this club, has bought a 30-foot cabin launch from Long Island parties to add to the club. The season with this club, as well as with the New Haven Yacht Club, has been a very profitable one. The latter club was dealt a blow last month, however by the sudden death of one of its most active boatmen, ex-Commodore H. S. Parmelee.

The house boat *Aunt Polly*, owned by Wm. Gillette, the playwright-actor, has left her cruising grounds in this State to be laid up for the winter in New York. She has a crew of seven, of whom two are cooks. She has been much improved by the addition of 39 feet to her length, and with her gasoline engine is capable of developing eight miles an hour. The boat is finely furnished and is very commodious. She now steers from a bridge on the upper deck.



**BOSTWICK AND THE "PAN-AM."**

**First of Twenty-Five Powerful Touring Cars Building in His Mamaroneck Shop.**

Albert C. Bostwick and his new Pan-American touring car, built by the Pan-American Automobile Co., in which he is interested, attracted considerable attention at Norwalk, where they met the reliability contestants. Mr. Bostwick was not driving nor riding in his machine, as the doctor had forbidden him doing so, and he was obliged to go into a hospital in New York on his return to have a second operation performed for the removal of an abscess forming on his forehead. The car, which is the demonstration machine, was driven down from Mamaroneck by Mr. Bostwick's mechanic, William M. Powers. It has a long tonneau body with an elongated hood covering a vertical four-cylinder motor, accessible through a door at the front of the hood. Though the mechanism resembles the Mercedes construction the general appearance of the machine is more like the Mors. It is geared high, the body is hung on very easy springs, and the machine runs almost noiselessly and with the utmost comfort to the passengers. It is enameled in a striking rich red.

Mr. Bostwick states that twenty-five of the machines are nearing completion in the assembling shop at Mamaroneck and

much if not all of the mechanism of the cars came from abroad, the name Pan-American seems not altogether applicable, but as all of the machines will be owned by Americans, this may offer sufficient excuse for calling them all-American. The first car, which has been severely tested, will be delivered to George I. Scott.

**Road Drivers Oppose Speed Measure.**

*Special Correspondence.*

PHILADELPHIA, PA., Oct. 20.—Having failed to send representatives to the recent meeting of local vehicle owners to unify the several speed laws governing the operation of the various classes of vehicles, the Philadelphia Road Drivers' Association has made its first move in the matter by filing a protest against the proposed new ordinance and appointing a committee to carry out the plan of opposition decided upon. The Road Drivers' objection is based upon the allegation that the move for a new maximum speed limit came from the automobilists, and that they will be the sole beneficiaries should it become a law. The committee is composed of Councilman Edward W. Patton, John W. Emery and W. S. P. Shields.

When the ordinance comes up before Councils, the Road Drivers' committee will make an effort to have inserted a clause compelling all operators of automobiles

**Mountain Climbing by Motorette.**

*Special Correspondence.*

ALBANY, N. Y., Oct. 20.—Fred S. Howell has recently returned from a trip which he made from his home here to the Twin Mountain House in the White Mountains in his De Dion 5-horse power motorette. He was accompanied by his wife and two children. He reports that only a few hills were encountered that he could not climb and thinks that if the condition of the roads had been better he might have made his way up most of them. Having to use a low gear on the heavy roads just before coming to the steepest hills he could not get much of a start and was obliged to get a horse to pull him up. This was the case when he struck the last rise to the Twin Mountain House, where he encountered a rainstorm and muddy, slippery roads.

**Rapid Work in Tabulating Data.**

Tabulating the data of the A. C. A. run, as contained in the books of the observers, has progressed so rapidly that it was completed in time for presentation at a meeting of the contest committee on Monday night. The committee is going about its work in a manner to insure accuracy of results, however, and no information will be given out until the work has all been checked over by the Audit Company, of New York, and until the sup-



ALBERT C. BOSTWICK IN HIS NEW PAN-AMERICAN TOURING CAR AT NORWALK, CONN.

that they will be in the market soon. Space for their public exhibition has been taken at the Madison Square Garden automobile show to be held in January next.

Inasmuch as the engines, bodies and

to pass examinations as engineers, and will also move for an equalization—as nearly as possible—of the speed rates allowed the fourteen classes of vehicles now provided for in the municipal law-books.

plementary questions asked of the observers after the conclusion of the run, have been answered to the satisfaction of the committee. Another meeting was held by the committee on Wednesday.



VOL. VII.

NO. 8

Published Every Saturday  
by**THE CLASS JOURNAL CO.**

395 BROADWAY

NEW YORK CITY

Western Office:

356 Dearborn Street - - - - - Chicago, Ill.

**SUBSCRIPTION:**United States, Canada and Mexico, One Year, \$2.00  
Other Countries in Postal Union, - One Year, \$3.00To Subscribers—Do not send money by ordinary mail.  
Remit by Draft, Post-office or Express Money Order,  
or Register your letter.

To Advertisers—Copy or changes in orders for advertisements for the issue of the week following should reach us not later than Saturday.

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Entered at New York Post-office as second-class matter.

SATURDAY, OCTOBER 25, 1902

**PUBLIC ASPECT OF THE CONTEST.**

Though the official tables are not yet completed, even the most truthful array of figures could add nothing to the proof that the Reliability Run of the Automobile Club of America has proved a complete success. While the final summary of speeds and stops will doubtless present much material of interest to contestants, to makers and to the motoring public, the true test of the success of such an undertaking lies less in the amount of technical data collected than in the popular judgment of all classes of motorists and of those of the outside public who are watching the development of the new vehicle.

The technical side of the question is a most important one, the basis of such an expedition must be purely technical, rules must be carefully framed and rigidly enforced, and lessons of the greatest value to the industry may be deduced from the records; but after all the real test is the off hand popular verdict. This, it is safe to say, is eminently satisfactory on all hands. The marked absence of serious criticism on the part of the owners and drivers of the competing cars is a pretty good proof that they are well satisfied with the general management and results of the contest; though naturally some will feel dissatisfied with their immediate showing on the records. The cars collectively, with a record for the fleet of sixty-eight at the finish line out of seventy-five starters after a week of regular running under conditions in some respects more trying than those of daily use, have made a splendid showing before the public; in both reliability and regularity of operation. The individual performances of the cars were on the whole, no less creditable when it is considered that the most trivial mishap,

such as would be but a matter of course in an ordinary day's run—the fouling of a sparking point or the loosening of a nut on the battery connections, served to spoil an otherwise perfect record. Many of the cars which will make but an indifferent showing in point of percentages, must be credited with an actual road performance such as should satisfy any individual owner.

While the judgment of the general public is in one way of very little value, being based upon purely superficial grounds, a favorable opinion from this quarter is at the present time of the utmost importance. The motor car is still on trial, both as to its rights on the public highway and its practical utility beside the ancient institution, the horse vehicle. Anything approaching a failure of the present trials, any untoward occurrence, however accidental, would have been seized by a certain part of the community as another argument for more stringent laws and the more rigid enforcement of those already in existence. So far from anything of this kind, the long course through cities and villages and over well traveled roads was completed without one accident to an outsider or anything more serious than a little skittishness on the part of some horses.

The effect of this long procession, novel, orderly, interesting, on the average citizen or farmer, could not fail to be of the best, and it is likely that the run has done much for the interests of motoring throughout New England. To the country at large, as informed by the press, the run has given good evidence of the practicability of the automobile in actual road use.

On the part of the Automobile Club of America there is every reason for congratulation over the inception and successful carrying out of an enterprise of no small magnitude and which is calculated to do so much for the advancement of the motor car in America.

**ART AND AUTOMOBILISM.**

Nearly everything in automobilism lends itself readily to artistic treatment, and the artists of Europe have seized upon this new field in which to ply their vocation with an energy that shows how keenly they appreciate its possibilities. In this respect we are still far behind them, but the substantial results which have been accomplished in construction work—as evidenced in the recent reliability contest—suggest that the time may now have come for beginning to give more attention to the refinements and the amenities which add charm to the mere utility of mechanical vehicles and surround the sport and pastime with new attractions.

We are not now speaking of sumptuous catalogues or art posters. Our well-developed commercial instincts will take care of these obvious applications of the

artistic principle. Neither do we particularly refer to what is known as a smart or chic style in the design and equipment of automobiles. Under this head much is admitted which has more to do with fashion and its caprices than with art. And in the end the art element in the design of automobiles and their principal accessories must be subordinate to utility; in other words it must wait until the utility problems have been fairly well threshed out and standard types firmly established and acknowledged. Such is the case in this country, at least, where artistic help must be specially enlisted. In Europe where competent artists eagerly flock to the industries in search of new opportunities and where the art-loving public embraces new ideas somewhat more readily, it is natural that many efforts should be made at incorporating captivating features of fancy and ornamentation even in those types of automobiles whose permanency in the market is not yet by any means fully assured.

In the broad field of accessories we are more independently situated, because here we come in contact with other industries in which the art element is already an established fact and one whose importance is becoming recognized more widely every day. The art industries touch automobilism at a number of points, and at one of these there seems to be offered a hint for immediate action by automobile clubs as well as individual well wishers of the automobile movement.

At automobile race meets and contests the awards have always been cups, medals and certificates. With all respect for the significance of the latter and their value for advertising purposes, it will probably be admitted that they fail to gratify the ambition, the heart or the vanity of the automobilist, being rather dry documents tinged, even, with a slight suspicion of condescension from the grantor to the grantee. There remain cups and medals for consideration. In these some degree of art can certainly be embodied, and usually is, but they are sadly lacking in variety. The successful racing man or automobile maker who gathers a collection of them, puts them into a glass case and after a while has something that looks for all the world like the show case of a silverware firm. He and his visitors must fall back upon the inscriptions in order to realize their meaning, and even so there is a depressing sense of sameness which goes poorly with the idea of trophies and triumphs which they are supposed to convey. They are mere certificates written on metal. They do very well one at a time, but in numbers they certify most obviously of a meager fancy and perfunctory honors.

A short time ago European automobile journals presented an engraving showing a piece of art work which had been one of the awards at an Austrian race. It rep-



resented, in silverware, an automobile bounding over a rough road. The impression of speed and power was cleverly conveyed by the position of the vehicle and driver aided by a little poetic license with the shape and angle of the front wheel guards. It was an interesting piece of work.

In these examples of what has been done elsewhere the lines are still drawn strictly within the old rule according to which awards in amateur sporting events must be artistic and ornamental, but not useful. Utility is excluded. It is art for art's sake, or at most an instrument for the particular sport concerned, which is decreed the fitting reward of the sportsman. Since that rule was formed and accepted, art has made a close union with many important industries, notably those of furniture manufacture, ornamental iron work, lamps, jewelry and pottery, and the devotees of sports and games have so increased in number that it has become outright embarrassing to be limited to useless articles of ornamentation for rewarding the victors in competitive events.

One of our leading national sports—yachting—has shown the way out of the difficulty by resolutely embracing the whole of the art industry as the mine from which awards may be dug in a pleasing profusion of variety. Being backed by great wealth and plenty of brain capacity the yachting clubs were in a position to depart from old rules without worrying over small points in sportsmen's etiquette or the distinction between "professionals" and amateurs. But automobilism is a good second in this respect. Its devotees cannot be suspected of attaching undue importance to the utility and pecuniary value of awards while disregarding their significance for stimulating sportsmanlike ambitions and progress in the industry.

A well-known yachtsman in Providence, we are told, has a room in his house which is completely appointed with articles of furniture, bric-a-brac, objects of art, including also cups and medals, every one of which was acquired as an award in some yachting contest. A plaque or inscription proclaims the occasion in each instance.

It requires no great flights of imagination to picture to oneself what a liberal extension of this universality in the outward forms of prizes would mean to the automobile movement. It would probably stimulate participation in all public automobile events and draw other industries to more active interest in automobile progress, and it would perhaps infuse additional life in club debates and induce many to offer prizes who are more engrossed in other forms of art work than that represented in cups and medals. But, first of all, it would bring a new liberal element into automobilism, contributing to the pleasures of its disciples and adepts.

### PLANS FOR FUTURE CONTESTS.

**Chairman Scarritt Proposes Montreal as Turning Point in 1903, With Longer Daily Runs.**

Even before the results of the October Reliability Run are known, thoughts have turned to the Reliability Contest for next year. When the subject is mentioned to Secretary Butler, who did a tremendous amount of work in connection with the run just concluded and is now temporarily indisposed, he throws up his hands deprecatingly and implores to be allowed to get the present affair out of the way before laying any plans or talking of the run of 1903. But William E. Scarritt, chairman of the contest committee, has some suggestions to make, and suggests that next season's reliability run be to Montreal and return, a distance of approximately 1,300 miles, over good, bad and indifferent highways. It is considered that the run to Boston and back, over

to be traversed within predetermined minimum and maximum times—met with so much favor that it will doubtless be seriously considered by the A. C. A.

### THE PRESIDENT'S CUP.

**Handsome Trophy Offered by A. R. Shattuck and How It May Be Awarded.**

Immediately preceding and succeeding the start and finish of the Reliability Run, the handsome gold-lined silver trophy cup offered by President A. R. Shattuck to the owner of the vehicle showing the largest number of reliability marks at the end of the contest, was on exhibition in the parlor of the Automobile Club of America. The cup is 7 inches in largest diameter and 14 inches high, and is valued at about \$250. As yet it bears no inscription and the club officials are somewhat puzzled to know how it is to be awarded to probably a dozen contestants who finished



PRESIDENT'S CUP FOR RELIABILITY CONTEST WINNER.

good roads and in fine weather, did not impose severe enough conditions, and that the run to Montreal, with more stringent rules, and increased mileage and a change daily of observers, will not prove too much of a test and will go further to prove the reliability of the machines and increase public confidence in them. Mr. Scarritt thinks that a better month than October cannot be selected for the affair. The route suggested is along the Hudson over the New York-Rochester route as far as Troy; thence north, through Saratoga Springs, through Fort Edward and Whitehall, and perhaps through a part of western Vermont, east of Lake Champlain.

The suggestion made by Mr. Scarritt at the Springfield smoker that the contest of 1904 be a go-as-you-please run to St. Louis—1,000 miles over routes to be selected by each individual contestant and

with perfect scores of 2,092 marks. As one solution of the difficulty it is suggested that all of the names of the winners be inscribed upon the cup and that the consent of the winners be obtained to permit the cup to remain as a decoration for the club rooms, each of the winners taking, instead of a fragmentary part of the trophy, a gold medal to be struck off especially for the occasion.

The three other cups, offered by the members of the contest committee, are not yet upon exhibition, being still in the manufacturer's hands. The Scarritt cup was offered for the vehicle showing the second largest number of reliability marks; the Chamberlin cup for the machine showing the third largest number of marks, and the Hill cup for the one making the fourth largest number. Much the same difficulty in awarding these confronts the committee.

## INDUSTRIAL

### PARIS AND ST. LOUIS EXHIBITS.

**Duties Removed and Freight Reduced in France—  
Free Space and Lights in St. Louis.**

The National Association of Automobile Manufacturers has just issued its Bulletin No. 6, dated October 15. In it are reprinted letters addressed to Secretary Harry Unwin by A. C. Baker, commander U. S. Navy and assistant chief of the transportation department of the Louisiana Purchase Exposition to be held in St. Louis in 1904, and from G. Rives, commissioner general and president of the organization committee of the fifth International Automobile Show to be held in Paris at the Grand Palais from December 10 to 25, 1902. The letter from M. Rives contains the information that the prices fixed for the installations cannot in any case be subject to reduction, the seventh article in the regulation clauses stating that "The rents for the spaces conceded to the exhibitors are fixed at 25 francs per square meter for the horizontal spaces in the entire perimeter of the large nave, which will be primarily reserved for the largest installations of Classes 1 and 2, according to the drawing of lots, except for the stands surrounding the center, which will be paid for at the rate of 50 francs per square meter; at 20 francs per square meter for all the other horizontal spaces, and at 15 francs per square meter for wall spaces. The flooring and carpets are included in the prices of the horizontal spaces, which furnishings will be provided by the executive committee."

Regarding duties on exhibits, M. Rives writes that the Minister of Commerce grants exemptions for articles admitted to the exhibition, which is made an actual bonded warehouse through decree published September 9. The railroads have granted special tariffs of 50 per cent. of the usual rates for transportation of exhibits, charging the full rate for carrying goods to the show, but returning them free of charge.

#### BIG DISPLAY IN ST. LOUIS.

Regarding the automobile section at the St. Louis Exposition, Mr. Baker, in his letters to the secretary of the N. A. A. M., states that this exposition contains 1,200 acres, that the buildings are much larger than those at Chicago in 1893, that Congress has appropriated \$6,000,000 for it, and the display of automobiles is expected to be the largest ever held in this country. The automobile section will be kept together as far as possible and the exhibit of the American motor vehicle manufacturers will not be separated. It is the hope of the management to be able to arrange the space so that the American display will connect directly with the exhibit of similar manufacturers from foreign countries, which will also be kept together.

A large number of applications for space have already been received from automobile manufacturers, especially in the West, and the management is confident of a magnificent display from France.

Manufacturers are invited to send in their application as soon as possible so that the chief of department will know about how much space he shall have to devote to this industry. It will be impossible to make definite allotments of spaces until all applications are in, and no applications will be considered before October 1, 1903. The applications must be in writing and should be presented upon forms that will be furnished by the exposition company and which may be obtained from Commander A. C. Baker, Assistant Chief of Transportation Department, World's Fair, St. Louis, or from Harry Unwin, Secretary of the National Association of Automobile Manufacturers, 7 East Forty-second Street, New York. Each application for space must be accompanied by a sketch, drawn to scale of one-quarter of an inch to the foot, showing the ground floor plan. Later on a sketch and front elevation of the general outlines of the installation decoration must be furnished the department. Applications should be made in duplicate, one to be sent to the department of transportation and the other to be retained by the exhibitor for reference. No charge will be made for space and exhibitors will receive a reasonable amount of electrical power for lighting purposes free. For special lighting, such as signs, etc., a pro rata charge will be made.

#### BANKER BROS.' NEW STATION.

**Fine New Building Being Fitted for Occupancy—  
Agents for International Cars.**

NEW YORK, Oct. 20.—The Banker Bros. Co., of Pittsburg, Philadelphia and New York, has taken a long-time lease on the two-story building at 139 and 141 West Thirty-eighth Street, and is fitting it up and decorating it preparatory to installing the lines of vehicles for which the Banker Brothers are agents. The building, which is especially constructed for an automobile station, 50 by 150 feet and having immense windows and great central skylight, is a new one, substantially erected. Offices are being fitted up on the second floor and a large vehicle elevator at the rear. These alterations or additions will be completed by November 1, when the vehicles will be installed. The negotiations were opened by C. G. Wridgway, manager of the New York store now located at 50 West Forty-third Street, and concluded by Arthur Banker, president of the company, who came from Pittsburg, and on the same trip made arrangements with the International Motor Car Co., of Toledo, to handle its products exclusively in New York, Manhattan Borough, the local store of that company having just been closed. In addition to the Toledo

gasoline tonneau and Toledo steam carriages, fitted with gasoline and kerosene burners, and the Waverley electric carriages and delivery wagons, the Banker Bros. Co. will handle the Peerless gasoline cars and the Pierce motorette, machines for which it has been agent for some time, and the St. Louis motor cars and a complete line of De Dion parts.

The Forty-third Street station will be retained and used as a repair, storage and supply station. There will be a new repair shop in the basement of the new Thirty-eighth Street station, the ground floor will be used as a storage room, having capacity for forty vehicles, and the salesroom and offices will be on the second floor.

The Banker Bros. Co. has also just leased Hart's livery stable, 100 by 150 feet, and three stories high, on North Broad Street, in Philadelphia, to provide larger quarters for its growing business.

#### GASOLINE STORAGE RESTRICTIONS.

**Draft of Bridgeport Ordinance, Upon Underwriter's  
Recommendations, Found Too Indefinite.**

BRIDGEPORT, CONN., Oct. 18.—Since the recent disastrous fire in this city, which destroyed an automobile station and half a dozen machines, the matter of gasoline storage has been a moot point for the ordinance committee of the board of aldermen, the committee finding it difficult to frame a regulation to satisfy all conditions. The work of the committee is based upon a communication addressed to the board by the Bridgeport Fire Underwriters' Association, reading in part as follows:

"We would suggest that no license be issued for the storage or keeping for sale in bulk, save in underground (buried in the ground) metal tanks, with no opening for drawing off contents below the level of the ground, but to be drawn from by pumps. Tanks should be provided with a ventilating pipe extending as high as the roofs of surrounding buildings, and no such tank capable of containing more than 50 gallons should be permitted within 100 feet of a hotel, dwelling, lodging, boarding or tenement house. When these fluids are to be kept in quantities not exceeding 5 gallons, or used for fuel, light, or power, that it be required that the reservoirs shall be filled by daylight only, when the stove is not in use; that no fire, blaze or artificial light be permitted in the room where such reservoir is being filled; that no gasoline, except such as is contained in the reservoir, shall be kept within the building; and that not more than 5 gallons, which shall be contained in an entirely inclosed metallic can, free from leak, shall be kept on the premises connected with the building.

"We would also respectfully call your attention to the danger from the storage of automobiles using gasoline for power, where more than three or four of these



machines are kept, and should, we think, be allowed only in buildings especially constructed for this purpose, and where proper protection can be given to adjoining buildings."

On the lines suggested, the ordinance committee made a draft of a proposed regulation which was referred to the city attorney, but he finds it too indefinite in a number of respects. One defect is that it does not specify in what sort of a building gasoline may be stored. A consultation will be held with the building inspector and he will be asked to define what restrictions he believes should be imposed.

#### GASOLINE VEHICLES IN MILWAUKEE.

**E. W. Olds to Push Sales of Automobiles—Advent of Toledo and Darracq.**

*Special Correspondence.*

MILWAUKEE, Wis., Oct. 18.—E. W. Olds, of the Olds Motor Works, of Detroit, has decided to make his home in Milwaukee. During the past few months Mr. Olds has occupied a portion of the Jonas Cycle Co.'s store on National Avenue, where he sold Oldsmobiles. To a representative of the AUTOMOBILE AND MOTOR REVIEW, Mr. Olds said that he had disposed of eighteen vehicles in the last seven weeks. "Business has been exceptionally good," said he, "and the best trade we have had has been in the past two months. The fall trade never was so good as it is now. Next year I will in all probability have much larger quarters and the Wisconsin end of the Oldsmobile company will be given more attention than ever before."

Mr. Olds said that the company's factories at Detroit and Lansing are being operated to their utmost capacity and that orders are coming in faster than they can be filled.

Another automobile agency has been established here and Milwaukee is likely to have still more agencies within the next month. The latest concern here to enter the motor vehicle field is to be known as the Bates-Odenbrett Automobile Company. It was organized recently and has opened a large store at 501-503 Broadway, in the central part of the city. The company is local agent for the Winton machine of Cleveland and the Locomobile, and expects to add others to the list.

The company has large quarters and is conducting a repair department as well as a department for storage. Mr. Odenbrett has the distinction of being the first Milwaukeean to own a motor vehicle. It was a few years ago that he went to Cleveland, and after spending a week at the Winton factory he returned to Milwaukee with a car. At that time it attracted considerable attention, being the first in the city. The Bates-Odenbrett Automobile Company has a delivery wagon and makes deliveries of small packages for a local department store. It is expected, according to an officer of the

company, to establish a delivery system in Milwaukee.

The Milwaukee Rubber Works, which has been organized in Milwaukee with \$200,000 capital stock for the manufacture of rubber tires for vehicles and bicycles, has purchased five acres of land at Fifteenth and Oklahoma Avenues, on the Madison division of the Chicago & Northwestern railroad and expects shortly to begin the erection of factory buildings.

The most heavily interested man in the concern is Charles Harris, formerly connected with the Consolidated Rubber and Tire and the Buckeye Rubber Co., of Akron, O. He has been in the city for some time studying the advantages of Milwaukee from a manufacturing point of view. Several wealthy and prominent Milwaukee men are also said to be interested in the venture.

Articles of incorporation were filed with the Secretary of State and the registrar of deeds a few days ago. The capital stock will be \$200,000. The plant will start with about 100 men, which number is to be increased as soon as suitable buildings can be secured.

The plant will consist of a two-story brick building, 60 by 300 feet, in which will be placed the heavy and special machinery for rubber manufacture. From this building three one-story wings 50 by 175 feet will be projected in which hose, belting and vehicle and automobile tires will be manufactured and cured.

The Jonas Cycle Co. is now local agent for the Darracq as well as for the Haynes-Apperson and Spaulding.

The Milwaukee Patent Puncture Proof Tire Co. has discontinued the manufacture of tires for motor bicycles.

#### NEW LONDON ENTERPRISE.

**H-F Construction Co. Tests Runabout Equipped With New Transmission Gear.**

*Special Correspondence.*

NEW LONDON, CONN., Oct. 20.—An unpainted gasoline runabout, not yet upholstered, which was designed by the H-F Construction Co., of New York, and built in this city, is being tested on the streets here. It is the first automobile ever built in New London. The H-F Construction Co. owns several patents on power transmitting devices, including a change speed gear that can be fitted to any motor or vehicle.

Manager M. A. Harris, of the company, has for several months been building the power transmitting devices at the shop of the Brown Cotton Gin Co., and lately decided to fit a transmitter to a runabout. The machine proved a complete success in the trials this week. On the first day, with a motor hurriedly put in place, the runabout was run on the streets and avenues of the lower section of the city without a hitch or accident, except that the chain ran off the sprocket once.

The gasoline motor is of the single,

vertical cylinder type, of 31-2 nominal horse power, and although this motor is rather small for a machine that weighs about 1,000 pounds, the new transmitter enables it to carry two passengers up any ordinary grade. The speed is controlled readily from a small lever on the seat, and in addition to a friction clutch for starting, the transmission system contains two positive clutches for change of speed and one positive clutch for reversing.

Improvements in the electrical equipment have been made by E. P. Laurent, superintendent of the H-F company, a young Frenchman, who possesses, in addition to a knowledge of electrical science, considerable experience in the construction of French automobiles.

Manager Harris, in conversation, stated that it is very likely that after the tests with the new machine are completed, other machines of the gasoline type will be built on a commercial basis and put on the market. The company has been investigating factory sites in New London and vicinity with a view of establishing a plant.

#### New Company Admitted to Ohio.

*Special Correspondence.*

CLEVELAND, O., Oct. 20.—The Cleveland Automatic Machine Co., which was incorporated in New Jersey some time ago with a capital of \$850,000, has been authorized by the Secretary of State to transact business in Ohio. The application papers state that \$150,000 of the capital stock will be used in Ohio. A. L. Garford, president of the Federal Mfg. Co., of Elyria, is president of this company, which was formerly the Cleveland Machine Screw Co. The company has given a mortgage on its lands and plant here in favor of the American Trust Co. for \$500,000 to guarantee the issue of \$500,000 in bonds, the proceeds of which will be used in the transaction of its business.

#### LOCAL BREVITIES ABOUT MAKERS.

The matter of the removal of the factory of the Peerless Mfg. Co. from Cleveland to Lorain, a neighboring Ohio town, is yet unsettled. The committee in charge of the affairs at Lorain has not carried out its side of the proposition, although reports indicate that some progress is being made. It is thought the matter will be settled soon.

The Hoffman Automobile & Mfg. Co. has increased its capital stock to \$100,000 and in the future Archie McLachlan, who has been elected secretary of the company, will take an active interest in its affairs.

Contracts have been awarded for the Winton Motor Carriage Co.'s new downtown headquarters and local salesrooms. It will be a large seven-story building on Huron street, near Euclid avenue, with a brick front and cut stone trimmings. The general offices will occupy two entire floors of this building when completed. It will cost something like \$40,000.

# Automobile Club Directory.

The following list of clubs and club officers is as complete as it has been possible to make it from data that has been received. It is the intention to keep it revised regularly to date, and for this purpose the secretaries of those clubs not fully represented are invited to send in the full list of officers and their addresses. We shall also be pleased to receive reports of club elections.

**AMERICAN AUTOMOBILE ASSOCIATION**—PRES., Winthrop E. Scarritt, A. C. of A.; 1ST VICE-PRES., F. C. Donald, Chicago A. C.; 2D VICE-PRES., Wm. Wallace Grant, Long Island A. C.; 3D VICE-PRES., Henry G. Morris, A. C. of Philadelphia, 408 Bourse Bldg., Philadelphia; SECY., S. M. Butler, A. C. of America, 753 Fifth Ave., N. Y. C.; TREAS., Jefferson Seligman, A. C. of America, Mills Bldg., N. Y. C.; DIRECTORS, F. G. Webb and A. R. Partridge, Long Island A. C.; A. R. Shattuck, A. C. of America; W. J. Stewart, New Jersey A. C.; F. C. Lewin, F. C. of Philadelphia; Dr. Chase, A. C. of Rhode Island.

**AMERICAN MOTOR LEAGUE**—PRES., Edwin F. Brown, Chicago; 1ST VICE-PRES., Chas. E. Duryea, Reading, Pa.; 2D VICE-PRES., Willis Grant Murray, Detroit, Mich.; 3RD VICE-PRES., S. Wallis Merrihew, New York; SECY., Frank A. Egan, 174 Broadway, New York; TREAS., Frederick B. Hill, Boston.

**AUTOMOBILE CLUB OF AMERICA** (753 Fifth Ave., New York)—PRES., Albert R. Shattuck, 11 Broadway, N. Y. C.; 1ST VICE-PRES., Gen. Geo. Moore Smith, foot E. 26th St., N. Y. C.; 2D VICE-PRES., Edwin Gould, 195 Broadway, N. Y. C.; 3D VICE-PRES., Harry Payne Whitney, 2 W. 57th St., N. Y. C.; SECY., S. M. Butler, 753 Fifth Ave., N. Y. C.; TREAS., Jefferson Seligman, Mills Bldg., N. Y. C.

**ALBANY AUTOMOBILE CLUB**—PRES., C. M. Page; VICE-PRES., H. D. Gould; SECY.—TREAS., F. G. Robinson, 99 Central Ave., Albany, N. Y.

**AUTOMOBILE CLUB OF BRIDGEPORT**—PRES., Dr. C. C. Godfrey, Bridgeport, Conn.; VICE-PRES., Arthur K. L. Watson; SECY., F. W. Bolande; TREAS., Jesse B. Cornwall.

**AUTOMOBILE CLUB OF CALIFORNIA** (415 Montgomery St., San Francisco)—PRES., F. A. Hyde, 415 Montgomery St., San Francisco, Cal.; VICE-PRES., Dr. F. J. Tillman; SECY., A. C. Aiken; TREAS., Byron Jackson.

**AUTOMOBILE CLUB OF CINCINNATI**—SECY., Dr. L. S. Cotter, 30 W. Seventh St., Cincinnati, O.

**AUTOMOBILE CLUB OF ILLINOIS**—SECY., M. Scott, 1251 Marquette Bldg., Chicago, Ill.

**AUTOMOBILE CLUB OF INDIANA**—PRES., Frederick M. Ayres, Indianapolis; VICE-PRES., Silas Baldwin, Indianapolis; SECY.—TREAS., A. J. McKim, Indianapolis; EXECUTIVE COMMITTEE, Dr. Henry Jameson, Dr. E. F. Hodges, George Pangborn and Henry Severin.

**AUTOMOBILE CLUB OF MAINE**—PRES., Maynard D. Hanson, 12 Monument Sq., Portland, Me.; VICE-PRES., C. H. Simonds, Portland, Me.; SECY., Henry M. Jones, 29 Pearl St., Portland, Me.; TREAS., Samuel S. Boyden, Union Mutual Bldg., Portland, Me.

**AUTOMOBILE CLUB OF MARYLAND**—PRES., W. Keyser, Jr., 1109 N. Calvert St., Baltimore, Md.; VICE-PRES., Wm. S. Beiding, 1127 N. Calvert St., Baltimore, Md.; SECY., C. Warner Storck, Altamont Hotel, Baltimore, Md.; TREAS., William Knabe, The Mt. Royal, Baltimore, Md.

**AUTOMOBILE CLUB OF NEW ENGLAND**—SECY., Geo. S. McQuesten, Brookline, Mass.

**AUTOMOBILE CLUB OF NEW JERSEY**—PRES., Winthrop E. Scarritt, East Orange, N. J.; VICE-PRES. AND SECY., W. J. Stewart, 8 Central Ave., Newark, N. J.; TREAS., Harlan W. Whipple, East Orange, N. J.

**AUTOMOBILE CLUB OF OMAHA**—PRES., A. I. Root, Omaha; VICE-PRES., J. T. Stewart, Council Bluffs; SECY., Dalton Risley, Omaha; TREAS., Dr. B. F. Straub, Fort Crook.

**AUTOMOBILE CLUB OF PHILADELPHIA** (250 N. Broad St., Philadelphia, Pa.)—PRES., Henry G. Morris, 408 Bourse Bldg., Phila.; 1ST VICE-PRES., Herbert Lloyd, 19th and Allegheny Ave., Phila.; 2D VICE-PRES., Pedro G. Salom, 408 Bourse Bldg., Phila.; 3D VICE-PRES., J. Horace Harding, 122 S. Fourth St., Phila.; SECY.—TREAS., Frank C. Lewin, 250 N. Broad St., Phila.

**AUTOMOBILE CLUB OF ROCHESTER**—SECY., Frederick Sager, 80 W. Main St., Rochester, N. Y.

**AUTOMOBILE CLUB OF SAN JOSE**—PRES., E. L. Sterling, San Jose, Cal.; SECY., B. D. Merchant, San Jose, Cal.

**AUTOMOBILE CLUB OF ST. LOUIS**—PRES., G. H. Walker; VICE-PRES., Dr. Jules F. Valle; TREAS., Edward Mallinckrodt, Jr., 36

Vandeventer Place, St. Louis, Mo.; SECY., Dr. E. M. Senseney, 2829 Washington Ave.

**AUTOMOBILE CLUB OF SYRACUSE**—PRES., T. D. Wilkin, 4 Wieting Block, Syracuse, N. Y.; VICE-PRES., Dr. Gregory Doyle, 307 W. Genesee St., Syracuse, N. Y.; SECY.—TREAS., F. H. Elliott, 515 S. A. & K. Bldg., Syracuse, N. Y.

**AUTOMOBILE CLUB OF TRENTON**—PRES., Karl G. Roebeling; VICE-PRES., John S. Broughton; SECY., Edward S. Wood, Trenton, N. J.; TREAS., George Buckman.

**AUTOMOBILE CLUB OF UTICA**—PRES., C. S. Mott, Utica, N. Y.; VICE-PRES., A. J. Seaton, Utica, N. Y.; SECY., James S. Holmes, Jr., Huron Bldg., Utica, N. Y.; TREAS., Samuel Campbell, Utica, N. Y.

**AUTOMOBILE CLUB OF WARREN** (Mass.)—PRES., Geo. W. Bennett; VICE-PRES., Lathrop V. Chaffee; SECY., Edward M. Moran; TREAS., Daniel A. Hathaway.

**BERKSHIRE AUTOMOBILE CLUB** (Pittsfield, Mass.)—PRES., Dr. Frank W. Brandow, 86 North St., Pittsfield, Mass.; VICE-PRES., Samuel G. Colt; SECY.—TREAS., L. A. Merchant.

**BLOOMSBURG AUTOMOBILE CLUB**—PRES., Stayer; SECY., C. W. Funston, Bloomsburg, Pa.; TREAS., Geo. Law.

**BROCKTON AUTOMOBILE CLUB**—PRES., Dr. F. E. Constans, Times Bldg., Brockton, Mass.; VICE-PRES., W. H. Marble, Brockton, Mass.; SECY., Harry T. Keith, Campello, Brockton, Mass.; TREAS., H. P. Morton, Brockton, Mass.

**BRONX AUTOMOBILE CLUB**—PRES., J. G. Sauer, M.D.; VICE-PRES., A. C. Geyser, M.D.; SECY.—TREAS., F. M. Jeffries.

**BUFFALO AUTOMOBILE CLUB**—PRES., Dr. Lee H. Smith; VICE-PRES., George S. Metcalfe; SECY., Dr. V. Mott Pierce, 663 Main St., Buffalo, N. Y.; TREAS., John Satterfield.

**CEDAR RAPIDS AUTOMOBILE CLUB**—PRES., W. S. Haskell; 1ST VICE-PRES., C. L. Miller; 2D VICE-PRES., W. G. Dows; SECY., George Henderson; TREAS., J. L. Bever, Jr., all Cedar Rapids, Iowa.

**CHICAGO AUTOMOBILE CLUB** (243 Michigan Ave.)—PRES., F. C. Donald; VICE-PRES., Charles Howard Tucker and Edwin F. Brown; SECY., Walter L. Githens; TREAS., F. X. Mudd; BOARD OF GOVERNORS, J. E. Keith, Dr. Milton B. Pine, B. F. Schlesinger, W. D. Sargent, Harrison Musgrave, J. W. Bates, B. J. Arnold and S. A. Miles.

**CLEVELAND AUTOMOBILE CLUB**—PRES., E. Schriever Reese; VICE-PRES., George L. Weise; SECY., George Colliester; TREAS., Windsor T. White.

**COLORADO AUTOMOBILE CLUB**—PRES., D. W. Brunton, Denver, Colo.; VICE-PRES., Col. D. C. Dodge; SECY.—TREAS., Dr. W. H. Bergtold, Denver, Colo.

**COLUMBIA UNIVERSITY AUTOMOBILE CLUB**—PRES., Lewis Iselin, 3 W. 52d St., N. Y. C.; VICE-PRES., F. T. Bogue, 326 Union St., Brooklyn, N. Y.; SECY.—TREAS., R. C. Gaige, Columbia University, N. Y. C.

**COLUMBUS AUTOMOBILE CLUB**—PRES., William A. Neil, Columbus, O.; VICE-PRES., C. M. Taylor; SECY.—TREAS., Campbell Chittenden, Broad St., Columbus, O.

**COUNCIL BLUFFS AUTOMOBILE CLUB**—PRES., M. Wellman; SECY.—TREAS., Thomas Farnsworth, Council Bluffs, Iowa.

**DAYTON AUTOMOBILE CLUB**, 405 S. Brown St., Dayton, Ohio—PRES., Carl L. Bauman; VICE-PRES., Dr. A. F. Bauman; SECY.—TREAS., Dr. W. Webster Eusey; ROAD CAPT., Frank P. Hilt.

**DETROIT AUTOMOBILE CLUB** (Jefferson Ave.)—PRES., F. H. Newberry; 1ST VICE-PRES., R. A. Alger, Jr.; 2D VICE-PRES., H. P. Joy; 3D VICE-PRES., P. H. McMillan; TREAS., D. M. Ferry, Jr.; SECY., W. E. Bertonshaw.

**GRAND RAPIDS AUTOMOBILE CLUB**—PRES., Charles B. Judd, Grand Rapids, Mich.; SECY., John T. Byrne, Grand Rapids, Mich.; TREAS., N. Fred Avery, Grand Rapids, Mich.

**HARTFORD AUTOMOBILE CLUB**—PRES., Leonard D. Flak, Hartford, Conn.; VICE-PRES., Dr. M. M. Johnson, Hartford, Conn.; SECY., Walter G. Cowles, Hartford, Conn.; TREAS., George M. Brown, Hartford, Conn.

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Y.; REC. SECY., J. V. Hemstreet, Herkimer, N. Y.; COR. SECY., W. I. Taber, Herkimer, N. Y.; TREAS., Howard Mark, Herkimer, N. Y.

**HUDSON COUNTY AUTOMOBILE CLUB**—PRES., A. G. Evans, Jersey City, N. J.; VICE-PRES., Dr. L. Bauman; SECY.—TREAS., Frank Eveland, 52 Madison Ave., N. Y. C.

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**LONG ISLAND AUTOMOBILE CLUB** (1190 Fulton St., Brooklyn, N. Y.)—PRES., Mr. Wallace Grant, 64 S. Oxford St., Brooklyn, N. Y.; VICE-PRES., Mr. Edward Pigeon, 1181 Dean St., Brooklyn, N. Y.; SECY., Mr. L. A. Hopkins, 1639 Fulton St., Brooklyn, N. Y.; TREAS., Mr. F. G. Webb, 81 Willoughby St., Brooklyn, N. Y.

**MASSACHUSETTS AUTOMOBILE CLUB**—PRES., J. Ransome Bridge; SECY., L. E. Knott, 16 Ashburton Pl., Boston, Mass.; TREAS., Conrad J. Reuter.

**MILWAUKEE AUTOMOBILE CLUB**—PRES., Dr. Ralph Elmergreen; VICE-PRES., F. P. Rugee; SECY., C. G. Morton; TREAS., Frederick Pollworth.

**NATIONAL CAPITAL AUTOMOBILE CLUB**—Lieut.-Gen. Nelson A. Miles, War Dept., Washington, D. C.; VICE-PRES., F. C. Stevens, 1415 G St., N. W., Washington, D. C.; J. C. Sibley, 1116 Vermont Ave., N. W., Washington, D. C.; Clarence F. Norment, The Portland, Washington, D. C.; Chas. E. Foster, 1017 16th St., N. W., Washington, D. C.; E. L. Weston, The Portland, Washington, D. C.; SECY., E. M. Sunderland, Washington, D. C.; TREAS., John Edwards, Washington, D. C.

**NEW BEDFORD AUTOMOBILE CLUB**—SECY., E. G. Watson, New Bedford, Mass.

**NORTH JERSEY AUTOMOBILE CLUB**—PRES., Chas. D. Cooke, Paterson, N. J.; 1ST VICE-PRES., Vernon Royle, Paterson, N. J.; 2D VICE-PRES., J. E. Barbour, Paterson, N. J.; SECY.—TREAS., Edward T. Bell, Jr., Paterson, N. J.; GOVERNORS, F. R. Reynolds, W. H. Fletcher, Robert Gaede and Heber Royle.

**NORTH SHORE AUTOMOBILE CLUB** (Beverly, Mass.)—PRES., Walter D. Denegre; VICE-PRES., Dr. Chas. T. Parker; SECY.—TREAS., Quincy A. Shaw, Jr.

**PENNSYLVANIA AUTOMOBILE CLUB**—SECY., Henry J. Johnson, 133 N. Broad St., Philadelphia, Pa.

**PRINCETON UNIVERSITY AUTOMOBILE CLUB**—PRES., P. Adamson; SECY., Chas. H. Dugro, Princeton, N. J.

**RHODE ISLAND AUTOMOBILE CLUB** (P. O. Box 1314, Providence, R. I.)—PRES., J. O. Chase, M.D., R. I.; 1ST VICE-PRES., H. A. DuVillard; 2D VICE-PRES., James E. Blake; SECY., B. S. Clark; ASSIST. SECY., B. F. Clark; TREAS., R. Lincoln Lippitt; CON. ENG., J. P. Wanton.

**SAN FRANCISCO AUTOMOBILE CLUB**—SECY., B. L. Ryder, San Francisco, Cal.

**SPRINGFIELD AUTOMOBILE CLUB**—PRES., H. G. Fisk; SECY., M. T. White; TREAS., F. S. Carr, Springfield, Mass.

**TOPEKA AUTOMOBILE CLUB—TEMPORARY CHAIRMAN**, J. N. Taggart; TEMPORARY SECY., Ralph D. Montgomery.

**TORONTO AUTOMOBILE CLUB**—PRES., John C. Eaton; VICE-PRES., R. E. Van Dyke; SECY.—TREAS., John M. Schulte, Queen's Park, Toronto, Canada.

**TROY AUTOMOBILE CLUB**—SECY., J. S. Thiel, Troy, N. Y.

**WORCESTER AUTOMOBILE CLUB**—PRES., George H. Cutting; VICE-PRES., Dr. Roy M. Garfield; SECY., H. L. Shiland; TREAS., John W. Harrington, Worcester, Mass.

## Warren Automobile Club.

The automobile owners of Warren, Mass., have got together and effected organization under the name of the Warren Automobile Club, with officers as follows: President, George W. Bennett; vice-president, Daniel A. Hathaway; executive committee, Fred W. Shaw, Russell Gold, William A. Barry, Miles Sweeney, John F. Teehan, Daniel A. Hathaway, Edward M. Moran, Lathrop V. Chaffee and George W. Bennett. A committee was also appointed to arrange a series of dances and entertainments for the winter months.



## BUSINESS NOTES.

**GOODYEAR TIRES.**—A neat little booklet entitled "As Others See Us," is issued by the Goodyear Tire & Rubber Co., of Akron, Ohio. It contains letters of various manufacturers commending the product of the Goodyear establishment, and also shows views of the tire fitter and joint closer manufactured by the company.

**GAUNTLETS AND CAPS.**—The Geo. W. McPherson Store, 71 and 79 Hanover Street, Boston, has brought out a new line of gloves and leather caps for automobile wear. The designs are what may be styled French-American. The M. A. C. gauntlet is made from imported stock stitched with silk and comes in three shades: black, craven-tan and olive.

**ROYAL LOCOMOBILIST.**—Prince Henry of Prussia has purchased a Locomobile, and the Locomobile Company has received the following telegram from its Hamburg agents: "Prince Henry left Hamburg yesterday morning with his new Locomobile and reached safely his castle Hemmelmark the same afternoon. His Royal Highness telegraphed us that he is delighted with the car."

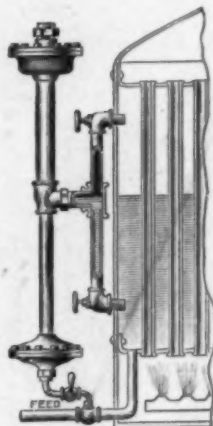
**LIFTING JACKS.**—Among the conveniences that automobilists are learning to appreciate, for the easy handling of automobiles in the barn and even on the road, the Bray Manufacturing Company, 115 Broadway, New York, inform us that lifting jacks hold a prominent place. They have recently shipped large consignments of this article to their agents in Chicago and St. Louis in order to meet the heavy demand in the West where automobile owners, as a rule, groom their vehicles themselves and consequently need the jacks frequently. The Bray company's jacks cover a full line, meeting the requirements for vehicles and machinery from the lightest to the heaviest.

**PUMP OILER.**—The characteristic feature of the oil can offered the automobile trade by the Wallace Supply Company, 56 Fifth Avenue, Chicago, is its simple force pump attachment. This is worked conveniently with the thumb and serves the purposes of cleanliness and economy. It seems to be particularly valuable for oiling inaccessible parts of machinery where one does not feel sure, with the ordinary oil can, whether the lubricant leaves the can or not and in what quantity. The spout, it is stated, will never stop up, because it is always full of oil. Even if the spout is used to clean out the oil cups, one pressure on the plunger will start the oil. The device was gotten up mainly for use with agricultural machinery and has not until now been offered to automobilists.

**ELECTRIC VEHICLE FOR SPECIAL SERVICE.**—The accompanying engraving shows the Electric Vehicle Company's new special service wagon, primarily intended for the departmental work of inspectors, superintendents, fire, police officials and others. Several of these vehicles were recently purchased by the New York Edi-

son Company for its inspectors. The running gear, control and steering are similar to those of the Columbia electric tonneau. The extension back has a large closed compartment, opening from the rear, which may be utilized for tools or luggage of any description. The top affords complete protection in stormy weather. While, as above stated, the intention of the manufacturers in placing this vehicle on the market was to provide for special requirements of the kind noted, it is, nevertheless, adapted for a wide variety of uses.

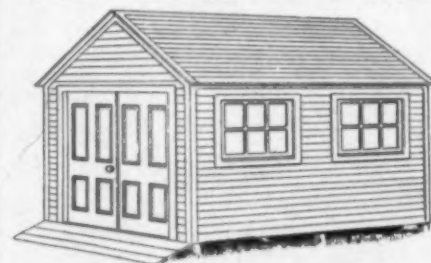
**BOILER FEED REGULATOR.**—This device, which is specially adapted for automobile boilers, is intended to regulate accurately and automatically the supply of water to the boiler, operating with a change of but 1-4 inch from the normal level for which it is adjusted. It consists of a chamber divided into two parts by a flexible diaphragm which operates a needle valve controlling a small outlet from the lower chamber. From the pressure chamber, shown at the lower left-hand corner of the engraving, rises a vertical pipe with connections, as shown, to the boiler. Within this pipe is a tube attached to the diaphragm, which is pierced so that water within the tube has free communication with the portion of the pressure chamber below the diaphragm. In this way the water in the outer tube presses upon the upper surface of the diaphragm while that in the inner tube presses on the lower surface. The needle valve is attached



to the lower side of the diaphragm. With both the tubes in communication with the steam and water in the boiler the pressures on the diaphragm are in equilibrium, but this equilibrium is destroyed by a light spring acting upward on the diaphragm, giving a little lifting power when the inner tube is full of water. When the level in the boiler has fallen below the entrance to the regulator, a quarter of an inch or less, steam displaces the water in the inner column, this water passing out through the needle valve until the height of the column of water and consequently the pressure on the underside of the diaphragm becomes less than the constant height and pressure of the outer column on the upper side of the diaphragm, when the needle valve is closed by the falling of the diaphragm and the pump resumes its action and feeds the boiler. The valve and seat are made of phosphor bronze, both removable for examination and repair. A filter is provided to prevent the entrance of impurities into the regulator. The device is made by Nelson Curtis, 22 Congress Street, Boston, Mass.

**GENERAL AUTOMOBILE & MFG. CO.**—This company is now located in its new factory at 1311-1330 Hamilton St., near Coe St., Cleveland, Ohio, which is easily reached on the Willson Avenue or St. Clair Street car lines. The telephone number is East 1910 on the Bell line. M. L. Thomsen has been appointed sales manager. His downtown office, after October 1, will be 1307 Williamson Building. The downtown office of the company is with F. H. Penning, secretary and treasurer, 207 Western Reserve Building; telephone, Main 1635 R.

**PORTABLE HOUSE.**—The problem of housing an automobile is one that presents some difficulties to many purchasers who have no suitable building on their premises. To meet a want of this sort E. F. Hodgson, of Dover, Mass., has



designed a portable automobile house which is kept in stock for sale. The house is of plain construction, as shown in the accompanying engraving, and it is intended that the owner set it up in the back or side yard. The house is shipped in sections, painted and ready for use. It is made of the best quality of cypress siding. The house shown is of the following dimensions: 10 ft. square, 9 ft. high at peak, 6 ft. at eaves, doors 6 ft. wide and 6½ ft. high. It has four windows and a floor with outside incline.

**THE SEARCHMONT TYPE VI.**—The latest model of the Searchmont tonneau touring car is well illustrated in full-page side and front views from photographs in a new catalogue just issued by the Fournier-Searchmont Automobile Co., of Philadelphia. The new model is briefly described, and on the last leaf of the catalogue are shown two photographic views of the Trainer mills just purchased at Trainer, Pa., by the company, into which it is now moving. The new Searchmont is fitted with an 8-h.p. double cylinder vertical motor placed at the front. The cylinders and heads are cast in one piece. The machine has three speeds forward and one reverse, with an improved transmission system arranged to give direct drive from the motor to the compensating gear, the intermediate gears remaining idle at the high speed. There are four brakes, two on the counter-shaft and two on the rear wheels, the latter operated by hand. The detachable tonneau is made especially roomy and comfortable.

**EDUCATIONAL WORK.**—The West Side Young Men's Christian Association, 315 West 57th Street, New York, begins its sixth season's activities in October. This Association now has a membership of over 2,300. The current expenses are \$50,000 annually, less than half of which are met by membership fees, a small amount by rentals and the balance by donations. There are over 600 students enrolled in the forty evening educational classes. There are also eight literary, musical and art clubs with large memberships. The library contains 48,000 volumes, about 15,000 of which are in the circulating department. Entertainments, which are free to members and their friends, are given every week. There are classes in gymnastics and athletics every afternoon and evening. The Association has a Savings Fund Department, an Employment Bureau, Dormitory Rooms, a Restaurant, a Boarding House Record and many other features which are helpful to young men, especially to those whose homes are not in New York.

**OLDSMOBILES.**—Owners of heavy weight powerful machines at the St. Louis races were treated to a surprise when the little 800-pound Oldsmobile captured both the five-mile races. The first race was for gasoline vehicles, open to all makers, and although the Oldsmobile lost time owing to a broken wire connection, it came in ahead of large machines of other makes. In the second race the Oldsmobile finished a long distance in the lead. The victory was a popular one with the crowd, as they rejoiced to see the little vehicle run away from its formidable-looking opponents.



son Company for its inspectors. The running gear, control and steering are similar to those of the Columbia electric tonneau. The extension back has a large closed compartment, opening

## BUSINESS NOTES.

**REMOVAL NOTICE.**—The Standard Roller Bearing Co. gives notice that it has removed its offices to the new factory building at Forty-eighth and Girard Avenue, Philadelphia, Pa.

**DIXON GRAPHITE.**—A booklet on the subject of Graphite Pipe Joint Compound has been issued by the Joseph Dixon Crucible Co., of Jersey City, N. J., and will be forwarded to any applicant, free of charge.

**PALMETTO PACKING.**—As a soft and pliable packing for air pumps, throttles and main rods, Greene, Tweed & Co., 17 Murray Street, New York, recommend their palmetto twist, which is made either round or square.

**BRITISH AWARD.**—The Locomobile Company of America, 7 East Forty-second Street, New York, has been informed that one of its regular model Locomobiles won the highest award in class B of the recent 650 miles Reliability Trials in Great Britain.

**ALMANAC FOR 1903.**—The first almanac for 1903 received by us is from A. L. Dyke, 1402 Pine Street, St. Louis, Mo. It is printed in two colors on a card to hang on the wall. In the center there is a large engraving of an automobile with occupants on the road.

**AUTOMOBILE HORNS.**—A variety of French automobile horns are illustrated and described in the circular issued by Chas. E. Miller, 101 Reade Street, New York. In the same circular there are illustrations and descriptions of automobile leather coats and other useful articles of equipment of the automobile and its owner.

**TIRE REPAIRS.**—Temporary tire repair stations were established by the Hartford Rubber Works Company at all noon and night controls on the route of the New York-Boston Reliability Contest. A supply of Hartford and Dunlop tires and a force of skilled repair men were found at each of these places during the transit of the contestants.

**GROUT LITERATURE.**—The Grout steam car catalogue is being issued by Grout Bros., of Orange, Mass., with a pictorial supplement showing various models of their vehicles and parts, such as boiler, burner, differential yoke, tool box, eccentrics and sprockets. The models shown are the standard stanhope, the queen stanhope, the box-front stanhope and the two-seated touring surrery.

**AUTOMOBILE BASKETS.**—The Rattan Mfg. Co., of New Haven, Conn., has prepared a line of automobile baskets of the latest French designs which are made in a variety of shapes and sizes to fit any car. They are woven of willow and reed; at the present time the willow being the most fashionable. This company makes a specialty of special orders, for which it is prepared to quote prices promptly.

**DRAFT REGULATOR.**—"Vacuum smoke chimney" is the term used for designating a patented draft regulator device placed on the market by The Standard Automobile Supply Co., 1112 Betz Building, Philadelphia. It consists in a pipe with a flattened funnel attached to the top and the narrow entrance to this flattened funnel arched over with a bent strip of sheet iron, or other metal, broad enough to project considerably over the edges of the funnel. Upon request, the makers will demonstrate the action of this chimney for steam carriages, and they state that it effectively checks any tendency of the fire to burn back or blow out, under all conditions encountered in the use of an automobile, always keeping a current of air flowing up through the burner tube, no matter from what quarter the wind may be and whether the machine is standing or running at full speed. The company seeks agencies and sends a small model for demonstrating purposes.

**UMBRELLA AUTOMOBILE COAT.**—This useful garment, so popular in England, is now for sale by Charles E. Miller, 97, 99, 101 Reade

Street, New York. It is a long, loose cape, with sleeves and a tight-fitting collar, rubber bands being fitted to the sleeves. Made of rubber it sheds the rain from the body and completely



excludes it about the neck and wrists. It is made in two qualities, the black being the ordinary, while the yellow or tan is of finer material. Catalogues will be sent on request.

**AUTOMOBILE PARTS.**—In a series of pamphlets just issued by A. L. Dyke, 1402 Pine Street, St. Louis, Mo., a great variety of the component parts of automobiles is contained. The pamphlets are profusely illustrated, and show running gears, gasoline engines, bodies, hoods, hubs and axles, wheels and gears, chains, electrical fittings, radiators, mufflers, carbureters, and many minor fittings and details of equipment. A good deal of information regarding size and dimensions is contained in the text, which is illustrated with line engravings and wood cuts.

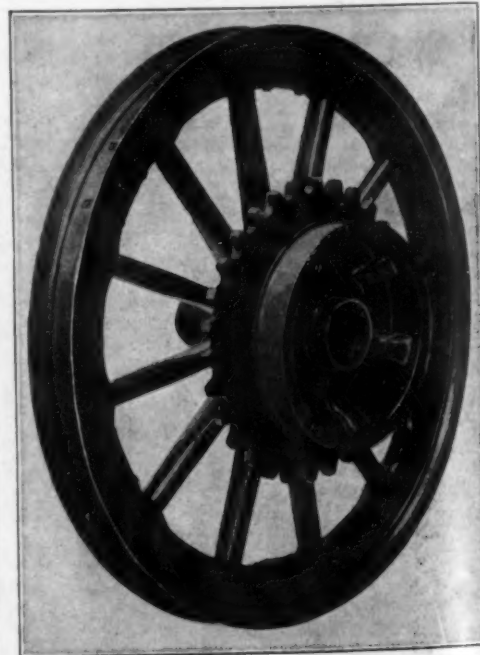
**MILLER KEROSENE ENGINE.**—An engine that uses either kerosene or crude petroleum with equally good results is made by the Jewell Storage Battery Co., of Boston, Mass. It is a two-cycle engine, with a variable speed from 300 to 700 r. p. m., and at the high speed developing 6 h.p. There are no valves and no moving parts inside of the engine except the piston and crankshaft, and it has no carburetor or mixing valve, the gas being formed inside of the cylinder. The fuel is fed to the cylinder by a plain plunger pump which throws a measured quantity of oil from the tank into the cylinder at each revolution. The speed of the engine may be raised either by regulating the oil supply or by advancing the sparking. No superheating is required to start, the engine being so constructed that it starts with cold oil and at from one to three turns of the crank. The engine itself weighs 260 lbs., and the balance wheel 350 lbs., making a total of 610 lbs., and it consumes one-sixth of a gallon of crude oil per horse-power hour. It has been run by the makers for 14 consecutive hours carrying a load of 72 16-c.p. incandescent lamps at a total cost of 63 cents.

**NEW STORAGE STATION.**—One of the largest and best equipped storage and repair stations in Massachusetts has been opened at 62 Middle Street, in Lowell, under the name of the Lowell Automobile Station. It is under the management of W. H. Greene.

**MAIL AND EXPRESS.**—A change in the ownership of the New York Mail and Express is announced. Henry M. Stoddard, Editor, and Edward Payson Call, Publisher, having acquired the controlling interest. This old established daily paper gives more attention to automobile news than probably any other metropolitan daily.

**FORCED GRAPHITE LUBRICATION.**—The London branch of the Jos. Dixon Crucible Co., of Jersey City, N. J., is exploiting a new system of cylinder lubrication. This consists of the use of a mixture of Dixon flake graphite and a special quality of high flash-point cylinder oil forming a thick paste. This is introduced into a force-feed lubricator of special design with a speed reducing gear driven by a belt from the crank shaft so that the driving motion of the lubricator is operated only twice per minute. The length of the stroke can be varied to engage any desired number of teeth in a ratchet wheel at each stroke. One or more pipes convey the lubricant to the cylinders or the steam chest. This lubricator and gearing are simple and can be attached to any suitable part of the engine or placed at some distance from it. The claims made for this lubricant and system are that in addition to perfect lubrication the amount of oil put through the engine is reduced to one-twentieth the quantity ordinarily used, one small drop of the lubricant per minute being sufficient for engines up to 600 h.p.; that this lubricant will stand the heat of superheated steam; that one filling of the lubricator will last from one to two months according to the hours of running and that in steam engines in which the water is condensed and used again, there is less oil to mix with the steam.

**SPROCKETS AND BRAKES.**—As an essential fitting to the artillery type of wood wheels, which it is now furnishing, the Neustadt-Perry Co., of



St. Louis, Mo., is putting out a special sprocket and brake drum for band brakes, as shown in the accompanying illustration, making a complete outfit for the chain drive with solid rear axle.



# STORAGE, REPAIR AND SUPPLY STATIONS SPEED LAWS AND OTHER REGULATIONS

## CONNECTICUT

**SPEED**—Outside city limits, 15 m.; inside, 12 m.; reduce at crossings; penalty for violation, not more than \$200. **HORNS or GONGS**—Not required by letter of law. **LAMPS**—Required on all rubber-tired vehicles; must be lighted from 1 hour after sunset to 1 hour before sunrise; penalty, \$5. If lights go out, operator "may proceed at 6 m. and give audible signal as often as 500 ft. are passed over."

### HARTFORD

304 ALLYN ST. Phone 219-2  
S. A. Miner. Phone Will Bring Our Repair Car Anywhere. Storing, Repairing, Charging, Gasoline. Always open.

43 WELLS ST. Phone 165  
Hartford Automobile Station. Open Day and Night. Storing, Repairing, Charging, Gasoline, All Supplies. Oldest, Largest and Best.

### NEW HAVEN

**SPEED, ETC.**—See state law. **PARKS**—Not allowed in some. **HORNS or BELLS**—Not required by letter of law.

105 GOFFE ST. Telephone 416-3  
H. C. Holcomb. Storage, Repairing, Supplies. Automobiles Exchanged, Bought and Sold. We can sell your Auto.

532 STATE STREET. Phone 1412-12  
Reichert's Auto. Station. Storing, Repairing, Charging, Supplies. Agent for Winton U. S. Long Distance Mobile.

## DIST. OF COLUMBIA

### WASHINGTON

**SPEED**—Outside city limits, 15 m.; off car-line streets, 12 m.; on intersecting car-line streets, 6 m. **LICENSE**—Required; fee, \$3; penalty, for operating steam vehicles without permit, \$1 to \$40.

1124 CONN. AVE., N. W. Phone Main 3027.  
The National Capital Automobile Co. Agents for the Oldsmobile, Autocar and Packard. Storage, Repair and Supply Station.

## ILLINOIS

### CHICAGO

**SPEED**—Everywhere in town, 8 m. **BELLS**—Required, to be sounded at street crossings, etc. **WHISTLES and HORNS**—Prohibited. **LAMPS**—Required; must be lighted between dusk and dawn. **LICENSE**—Operators required to have license; fee, first year, \$3; thereafter, \$1. **NUMBERS or INITIALS**—Not required. **BRAKES**—Two sets required, one independent of driving gear. **SPECIAL**—No machinery may be left running when vehicle is standing in street with no one in charge.

5311-13 COTTAGE GROVE AVE. Phone Drexel 9363  
C. A. Coey & Co., Agents for Woodruff Automobiles. Storing, Repairing, Renting and Supplies.

4 CALHOUN PLACE, near Dearborn. Tel. Central 4334  
A. J. Millman. Storing, Repairing, Remodeling and Supplies.

285 N. STATE STREET. Telephone North 1430  
Chicago Automobile Repository Co. Storage, Repairing, Remodeling and Supplies.

385 E. SUPERIOR STREET, Rear. Tel. North 1522  
North Division Auto. Co. Automobiles Sold, Repaired, Charged and Stored.

12 PLYMOUTH PLACE. Phone Jackson 393  
S. B. Williams. Special Machine Work. Gasoline Engines, Automobile Repairing.

VAN BUREN and OAKLEY BLVD. Phone West 252  
Hagmann & Hammerly. Storage, Repairing, Remodeling. Agents Remington.

## INDIANA

### TERRE HAUTE, IND.

25 S. SEVENTH ST. Phone 7522  
A. Chaney & Bro. Agents for Mobile, Steam and Waverly Electric. Storage, Repairing and Supplies.

## IOWA

### CEDAR RAPIDS

#### CEDAR RAPIDS SUPPLY CO.

J. C. Pickering, Pres. and Treas. General Storage and Supply Station. Agents for Rambler Gasoline, Toledo Steam and Waverly Electric Machines.

## MASSACHUSETTS

**SPEED**—Outside city limits, fire district or thickly settled part of a town, 15 m.; inside such limits, 10 m.; approaching horses, reduce speed if animal shows fright and stop on signal of driver; reduce at crossings. **PENALTY**—Fine not exceeding \$300, or imprisonment not exceeding 10 days, or both.

### BOSTON

**SPEED**—In city streets, 10 m.; in parks, 8 m.; outside city, 15 m. **LAMPS**—Three required. **PARKS**—Permit required from Park Department.

43 AND 45 COLUMBUS AVENUE  
G. T. Gould, Boston Agency for the U. S. Long Distance Car.

147-153 COLUMBUS AVENUE  
Columbus Automobile Exchange—A. J. Coburn & Co. Automobiles and Motor Cycles. Sole Agents for Orient, Elmore, Crestmobile, French Darracq Cars.

147-153 COLUMBUS AVENUE. Phone 388-2 Tremont  
Columbus Automobile Exchange, New England Agents for Steam and Gasoline Automobiles. Storage, Repairing, Supplies.

Entrances Clarendon & Stanhope Sts. Tel. 251-9Trem't  
Back Bay Hydro-Carbon Repair Co. Gasoline Car Repairing a Specialty. All Work Done by Experts. First-class Storage Station.

66-68 STANHOPE STREET. Telephone 211 Tremont  
Automobile Headquarters. Eastern Agts. for Knox, St. Louis, Gasmobile, Stearns, Pierce Motorettes. Also French and American Touring Cars. Open night and day the year 'round.

TREMONT and BERKLEY STS. Phone 1097 Tremont  
Boston Salesrooms, Odd Fellows Building. "White Steamers." Stanhopes, Phaetons and Touring Cars. First-class Storage and Repair Stations.

### CAMBRIDGE

424 MASS. AVE. Phone 142 Cambridge  
Crest Mfg. Co. Repairing, All Supplies. Expert Mechanics and Electricians Furnished. Makers of Crestmobile; \$600. Crest Gasoline Motors, Colls and Parts.

8-10 PALMER STREET. 72-2 Cambridge  
Harvard Automobile Co. Storing, Charging, Repairing, Building. Always Open.

### SALEM

COR. DODGE AND LAFAYETTE near Depot.  
Phone—Day, 438-4; Night, 106-4.  
Repairing, Storing, Gasoline. All Supplies. Zina Goodell Mfg. Auto Parts and Machines to Order.

### SPRINGFIELD

**SPEED**—State law applies. Reduce at street intersections. **LAMPS**—Required 1 h. after sunset; not enforced. **ALARM**—Required to be sounded as necessary. **PARKS**—Permit required for Forest Park; furnished free; rules accompany permit. No registration.

36-38 DWIGHT ST. Phone 869-12  
Automobile Headquarters. J. E. Cowan, Mgr. Storing, Repairing, Charging, Supplies.

### TAUNTON

4-5 POST-OFFICE SQUARE. Phone 209-3  
Repairing, Gasoline, Water and Supplies. Robertson Auto Station.

### WALTHAM

136 NEWTON ST. Phone 256-3 Waltham  
Repairing, Storing, Gasoline, Supplies. Waltham Automobile Co. Mfg. of Piper Burners and Steam Automobiles.

### WORCESTER

**SPEED**—10 m. **GONG or HORN**—Required. State law applies.

43 FOSTER, corner COMMERCIAL. Phone 659-4  
Worcester Automobile Station, No. 1. Agents for Packard, Oldsmobile, Autocar and Rambler. Storing, Charging, Repairing, Supplies, Always open.

671-673 MAIN ST. Phone 1550

Robinson Automobile Station, Agents for U. S. Long Distance, White, Locomobile, Waverly. Storing, Charging, Repairing, Supplies.

## NEW JERSEY

### ATLANTIC CITY

1003 ATLANTIC AVE. Phone, Local 677, L-Distance 63A  
J. C. W. Parsons, Agent for Locomobile and Electric Automobiles. Storing, Repairing, Gasoline and Supplies. Open always.

12 50. MARYLAND AVE. Phone 544XBell  
H. W. Cochran, Agent for Electric Vehicle Co. Charging, Storing, Repairing, Gasoline, Supplies.

### NEWARK

**SPEED**—In Newark, 8 m.; outside Newark, in Essex County, 15 m.; rounding corners, 4 m. **HORN or BELL**—Required to be sounded 100 ft. from other vehicles. **LAMPS**—One required, to be lighted 1 hour after sunset. **LICENSE**—Required; fee, 50 cents. **INITIALS**—Required on vehicle.

MECHANIC STREET, 27. Phone 3071 Newark  
W. B. Dodge. Agent Electric Vehicle Co. Charging, Repairing, Storing and Supplies.

### PATERSON

**SPEED**—No regulation. **HORNS or GONGS**—Some alarm required. **LAMPS**—Required between sunset and sunrise.

450 BROADWAY. Telephone 243

F. W. Stockbridge, Automobile Headquarters. Agent for Imported French Darracqs, Oldsmobiles, U. S. Long Distance, Prescotts, Locomobiles, Waverlys. Storing, Charging, Repairing and Supplies.

## NEW YORK

**COCKS LAW**—**SPEED**—Outside corporate limits, 20 m.; on bridges, 4 m.; inside corporate limits, 8 m., except where higher speed is permitted by local ordinance. **PENALTY**—A fine not exceeding \$50, or imprisonment not exceeding 6 mos., or both. **HIGHWAY LAW** (Doughty)—**SPEED**—Outside built-up parts of towns and villages, 15 m.; in built-up sections of towns, 8 m. Must stop on signal of driver to let relative horses pass. **REGISTRATION**—Owner must obtain certificate from Secretary of State within 10 days after purchasing vehicle; fee, \$1. **INITIALS**—Required to be fixed to back of vehicle and must be 3 ins. high and 3/4 in. wide. **LAMPS**—Two required showing white light in front; also red light visible behind; must be lighted between from 1 hour after sunset to 1 hour before sunrise. **BELLS or HORNS**—One or other required. **BRAKES**—Required to be good and efficient; penalty, fine not exceeding \$25. **LOCAL ORDINANCES**—The state road law prohibits local town and park boards from excluding automobiles and bicycles from open public highways; from placing lower speed limits than 8 m. and 15 m. in unbuilt-up parts of towns, and from requiring license or permit except from owners of public vehicles.

### ALBANY.

**SPEED, LIGHTS, ALARM, INITIALS, ETC.**—State law applies. **BRIDGE TOLL**—Single seat, 10 cents; double seat, 15 cents.

97-99-101 CENTRAL AVENUE. Phone 1509F L. Dis.  
Automobile Storage & Trading Co., General Agency for Automobiles. Storage, Supplies, Repairs. Competent Attendants.

167 NORTH PEARL STREET. Long Distance 967  
Albany Automobile Works. Motor Vehicles of all Types Stored and Repaired. Machine Shop Attached. Charges Moderate.

255 SHERMAN STREET. Phone 257F West  
C. F. Weeber Mfg. Works. The Largest and Best Equipped Automobile Repair Shop in the city. Mfr. of Weeber Muffer.

### AMSTERDAM

8 DIVISION ST. Bell Phone 260  
Gode & Brown. Agents for Locomobile and Motor Cycles. Storage, Cleaning, Supplies. Up-to-date Repair Shop. Always Open.

### BROOKLYN

712 BEDFORD AVE. Phone 537 Williamsburg  
Lincoln C. Cocheu. Charging, Storage, Repairs. Batteries a specialty.

752 BEDFORD AVE. Phone 2356A Williamsburg  
J. W. Mears, Exclusive Agency U. S. Long Distance Car. Automobiles Stored, Repaired, Sold and Exchanged.

1148 BEDFORD AVE. Telephone 2422 Bedford  
Arthur R. Townsend. Agent for the Waverly Electric, Toledo Steam, Toledo Gasoline Car, Knox Gasmobile. Charging, Storing, Repairing, Supplies.

10 CLINTON ST., near Bridge. Phone 1225 Main  
Maltby Mfg. Co., Agents for Mobile, Olds, National Electric. Storage, Repairs, Batteries Charged, All Supplies.

(Continued on next Page.)

342 FLATBUSH AVE., near Eighth. Phone 1681 Main International Motor Car Co. Charging, Storage, Repairing, Supplies. Open day and night.

473 FLATBUSH AVE. Phone 618 Flatbush Ave. Alex. Schwalbach. Agent for All Popular Makes. Motor Cycles and Their Repairs a Specialty. Practical Repairer of Gasoline Automobiles. Carriage Tires Repaired and Replaced. Bicycles. Long Island Agent for the Racycle.

1239-43 FULTON ST., nr Bedford Av. Phone Bedford 705 Brooklyn Automobile Co., Agents Haynes-Ap-person, Oldsmobile, Locomobile. Charging, Repairing, Supplies.

1241 FULTON ST. Phone 705 Bedford Chas. W. Spurr, Jr., exclusive agent for Brooklyn and Long Island for Crestmobile. Price \$600. Call and take a ride.

3 PROSPECT PARK WEST. Phone 969 Prospect Prospect Park Storage Co., Agents National Electric. Charging, Repairing, Storing, Supplies.

58 SCHERMERHORN ST. Phone 3710 Main Patterson & Shaw, Agents Elmore, Gasmobile, Waverley. Storage, Repairing, Charging, Supplies.

### BUFFALO

SPEED—5 m.; on Main Street, south of Chip-pewa, 5 m.; rounding corners and at street and alley intersections, 5 m. HORNS or GONGS—Not required. LIGHTS—Required all hours after nightfall. REGISTRATION, etc.—State law applies.

73-875 MAIN ST. Phone 468 Tupper The W. C. Jaynes Automobile Co. Storage, Charging and Repairing Station. Complete line of Automobile Sundries. Agent for Oldsmobile, Winton, National Electric and Buffalo Electric Vehicle Co.

### NEW YORK CITY

SPEED, LAMPS, BELLS, LICENSE—See state law. FERRIES—Will carry any class of vehicle with tanks filled if engine is stopped and fire extinguished; toll, same as for teams. BRIDGE TOLL—Same as for teams.

37th STREET, 515 7th AVE. Tels. 6495 & 6496 - 38th Smith & Mabey, Importers of Panhards, C. G. V., Renault Automobiles, Parts and Supplies. The American C. G. V. Gasoline Cars. Storage and Charging Station. Open Day and Night. Specially Equipped for Repair of Foreign Cars.

38th ST. 136 WEST Phone 476 38th St. Standard Automobile Co. Sole U. S. Agents for the Decauville French Car. Also American Gasoline Cars. Thoroughly Equipped Repair Shop, Employing Only Skilled Mechanics. Parts, Replacements, Supplies and Storage.

38th ST. 138 WEST. Phone 6684 38th St. The Oldsmobile Co. New York Agents Oldsmobile Gasoline Runabouts.

38TH ST. 141-143 WEST Banker Bros. Co., Exclusive New York Agents for Peerless, Pierce, International and St. Louis Gasoline Cars, Toledo Steam and Waverley Electrics. Storing, Repairing and Supplies. Open Day and Night.

43d, 38-40 WEST. Telephone 691—38th St. A. G. Spalding & Bros., Agents for the Automobiles, Oldsmobiles and Waverley Electrics. Charging, Repairing, Storing, Supplies. Open Day and Night.

43d ST. 50 WEST. Telephone 2289—38th St. Banker Bros. Co., Storage, Repairs and Supplies. Excellent facilities. Salesroom 139-141 W. 38th St.

44th ST. 307 WEST. Tel. 6486B 38th St. Long Acre Auto Depot. Storing, Repairing, Supplies. Second Hand Machines Bought and Sold.

44th ST. 523 FIFTH AVE. Tel. 6029 38th St. Westchester Auto. Co. Agents for Leading French and American Automobiles. Storage, Repairs, Supplies, etc.

50th ST. 239 WEST. Tel. 902 Columbus Alexander Fisher. The Georges, Richard, Mercedes, Rochet-Schneider.

51st STREET, 143 WEST. Phone 1601 Columbus Knickerbocker Automobile Station, S. O. Minster, Mgr. Storage, Charging, Repairing and Supplies.

53d STREET, 1684 BROADWAY. Phone 2397 Col. Central Automobile Co. Sole U. S. Agents for Peugeot, Mors, Cottareau. N. Y. City Agents Electric Vehicle Co., of Hartford. Charging, Storing, Repairing. Parts for French Vehicles. All Kinds of Supplies. Open Day and Night.

57th STREET, 140 EAST. Phone 1161 38th St. John Wanamaker. Fournier-Searchmont, Baker, Mobile. Charging, Storing, Repairing and Supplies. Open Day and Night.

57th ST. 154 EAST. Phone 3473 - 38th St. Metropolitan Motor Car Co. Expert Repairs for All Makes of Vehicles. Charging and Supplies.

58th STREET, 33-39 EAST. Phone 762 - 38th Barry & Hayes. Storage of Foreign Machines a Specialty. Repairs and Supplies.

58th ST. 150-152 EAST. Telephone 4421 - 38th St. Winton Motor Carriage Co., Branch House. Storage and Repairs for Wintons Only.

59th ST. 306 WEST. Telephone 2060 Columbus A. Elliott Ranney, Agent for Remington, Prescott, Darracq, Waverley and Toledo. Storage and Supplies.

59th ST. WEST, 317-319. Telephone 623 Columbus Adams-McMurtry Co., Agents for Packard Gasoline Cars. Repairing, Supplies.

60th STREET, 10 WEST. Phone 1874 Col. Webster Auto. Co. Agents Webster Gasoline Tonneau Car, Prescott Steam Carriages. All Makes of New and Second Hand Carriages Purchased, Exchanged and Sold. Storage, Repairs and Supplies.

60th STREET, 38-40 WEST. Phone 2440 Columbus American Storage Co. for Automobiles. Five Floors and Basement. Storage, Charging, Repairing and Supplies. Special Facilities for Taking Care of Foreign Machines and Oldsmobiles. Open Day and Night.

60th ST. 57 WEST. Tel. 1271 Columbus St. Nicholas Automobile Depot. Storage, Charging, Repairing and Supplies. Open Day and Night.

80th ST. 250 WEST. Phone 2562 Riverside Pa-delford & Beil, Agents for Columbia Electric Automobiles. Salesroom, Storing, Repairing, Supplies.

86th ST., 205-207-209 EAST. Tel. 3269-79th St. Yorkville Auto. Station. Exceptional Storing Facilities. Repairing and Supplies.

89th STREET, 202-210 WEST. Tel. 144 Riverside West End Storage Co. Dead Storage \$5.00 to \$10.00 a Month. Live Storage. Repairs and Charging.

98th ST. and FIFTH AVE. Telephone 2369 - 79th St. E. R. Fisher, Prop. Storing and Repairing Steam and Gasoline Only. Supplies.

100th ST., Cor. Broadway. Tels 2686 & 2687 Riverside Homan & Schulz, Sole New York Agents for Northern Gasoline Runabouts. Also Agents for Darracq, Locomobile, Waverley and Woods. Best Facilities for Difficult Repair Work. Storage, Charging and Supplies.

120th ST. 175 EAST. Phone 1444 A Harlem Chas. Strathman, Agent for Mobile. Storing, Repairing and Supplies.

127th ST. 152 WEST. Phone 3326 Harlem West End Automobile Exchange. Storing, Repairing, Cleaning, Supplies. Always open.

127th STREET, 153-159 W. Phone 681 Morning Side Harlem Automobile Co. Storing, Charging, Repairing and Supplies. Tire Vulcanizing Always open.

1918 JEROME AVE., nr 177th St. Phone 233 Tremont Hoffman & Setzer. Repairs, Storage, Supplies and Painting.

### ROCHESTER

150-170 SOUTH AVE. Phones 3 Bell, 3 Home Rochester Auto. Co., Jos. J. Mandery, Prop. Agent for Columbia, Studebaker and Baker Electrics, Winton, Peerless, Oldsmobile, Pierce, Columbia, Locomobile Gasoline and Locomobile Steam. Storage, Charging, Repairing and Supplies.

74 EXCHANGE ST. Tels. 959 Main Bell, 785 Home C. J. Conolly. Agent for Mobile and National. Storing, Charging, Repairing and Supplies.

### SYRACUSE

SPEED, ETC.—See state law. No local legislation.

346-348 SO. WARREN ST. Phone 955 New Syracuse Automobile Co. (Incorporated), Agents for Locomobile, Oldsmobile, Waverley, Storage, Repairs, Gasoline and Lubricants. Special Attention to Tourists.

110 WEST ONONDAGA ST. New Phone 2186 A Hoffman & Weaver, Agents for the "Mobile." Finest Equipped Repair Shop in City. Sundries and Storage.

### TROY

359-361 FULTON STREET. Phone 399M James Lucey, Automobile Exchange. Storing, Gasoline and Electrics. Storing, Charging, Repairing, Gasoline.

### UTICA

ONEIDA SQUARE. Phone 884-A

Miller-Mundy Motor Carriage Co., Agents for White Steamer, Pierce Motorettes, Waverley Electrics. Storing, Repairing, Charging, Gasoline. Special attention to Tourists.

### OHIO

#### CLEVELAND

SPEED—Within  $\frac{1}{4}$ -mile from east and west ends of Superior Street viaduct, 7 m.; outside such radius, 15 m. Must stop upon signal from horse driver. LICENSE—Required; fee, \$1. NUMBERS—Registered numbers must be attached at rear and kept clean. LAMPS—One on each side must be kept lighted during darkness. BELL or HORN—Required, and must be sounded when there is danger of accident. PENALTY—For violation of any section, fine not exceeding \$50.

### COLUMBUS

SPEED—On of business streets, 14 m.; on business streets, 8 m. PENALTY—Fine from \$5 to \$50 or 30 days' imprisonment. BELLS or HORNS—One or other required, to be sounded when necessary. LAMPS—Required after dark. PENALTY—Fine not exceeding \$50.

### TOLEDO

SPEED—Inside city limits, 10 m.

### CINCINNATI

SPEED—In streets and parks, 8 m. HORNS or GONGS—Must be sounded 100 ft. before street crossings. LAMPS—Must be lighted between sunset and sunrise. BRAKES—Efficient brakes required. LICENSE—none required. INITIALS—None required. TOLLS—Bridge toll, 10 cents. SPECIAL—Two vehicles must not travel abreast.

640 MAIN STREET. Phone Main 3107 The Special Motor Vehicle Co. Agents for Fournier-Searchmont and Spaulding Lines. Rebuilding and Repairing Motor Vehicles.

807-809 RACE STREET. Phone Main 2329 The Cincinnati Automobile Co. Agents for Toledo and Rambler Lines.

## PENNSYLVANIA

### PHILADELPHIA

SPEED—Inside city limits, 7 m. Parks, same. BELLS or GONGS—To be sounded only at crossings. LAMPS—Required. PARKS—State law limits speed to 7 m. LICENSE—Required in parks; fee, 25 cents. NUMBERS—Must be attached at rear of vehicle in parks. TOLLS—No bridge tolls, but main roads have toll gates each 2 or 3 m.; charge same as for 2-horse team. FERRY—Charge same as for 3-horse team.

246-248 N. BROAD. Phone 1-48-44 Winton Motor Carriage Co. A. E. Maltby, Mgr. Storing, Repairing, Supplies—Winton Cars only.

138-140 N. BROAD ST. Phone 1-42-51A Quaker City Automobile Co., Agents for Oldsmobile. Storing, Repairing, Supplies. Open day and night.

N. BROAD 250-256. Phone 1-37-42 Pennsylvania Electric Vehicle Co., Exclusive Licensees of Pa. for Columbia Automobiles. Charging, Storing, Repairing, Supplies.

N. BROAD ST. 304. Phone 1-33-83 Broad St. Automobile Station, Agents for Panhard, Richard, Spalding and Crestmobile. Storing, Charging, Repairing, All Supplies. Open day and night.

23d and WALNUT STS. Phone 1-38-65 John Wanamaker. Fournier-Searchmont, Baker, Mobile. Charging, Storing, Repairing and Supplies. Open day and night.

### PITTSBURG

SPEED—In city streets, 12 m.

5909 CENTER AVE. Phone 1664 East Pittsburg Automobile Co. Repairing, Charging, Storage and Supplies.

### YORK

SPEED—In city limits, 8 m. LAMPS—Must display one or more lights.

REAR 14 NORTH GEORGE ST. Phone 42251 J. P. Oden. Automobile Exchange. Storing and Charging. First Class Repairing Only.

COR. MARKET & BEAVER. Express Bldg. York Phone J. H. Snyder, Storage, Repairing, and Supplies. Agent for Oldsmobile.

## RHODE ISLAND

SPEED—Outside compact parts of cities and towns, 10 m.; inside, 8 m.; reduce at crossings. INITIALS—Resident owners must display initials in block letters 2 ins. high. BELLS and HORNS—One or other required, but must not be used excessively. MUFFLER—Required at all times on public highway. PENALTY—Fine of \$10 or 10 days' imprisonment for first offense; doubled for subsequent violations.

### PROVIDENCE

SPEED—In city, 10 m. LAMPS—Three required.

OPPOSITE UNION STATION. Telephone 1058 H. G. Martin & Co., Agent Winton, Locomobile, Elec. Veh. Co. Storing, Charging, Repairing, All Supplies. Always Open.

## WISCONSIN

### MILWAUKEE

501 BROADWAY. Phone Black 8072 Bates-Odenbrett Automobile Co. Storage, Repairing and Supplies.



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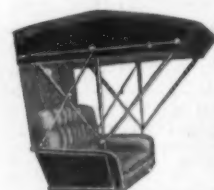
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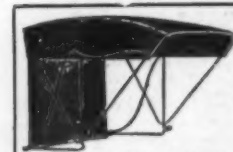
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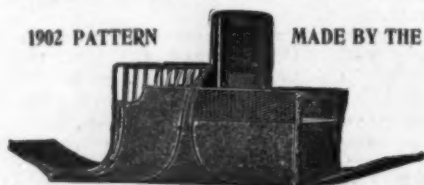
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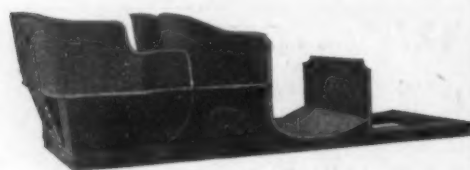
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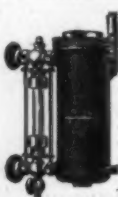


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10	11	4	"	5.00
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2 1/2	10 1/2	3 3/4	"	3.75
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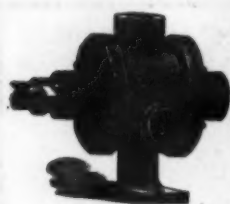
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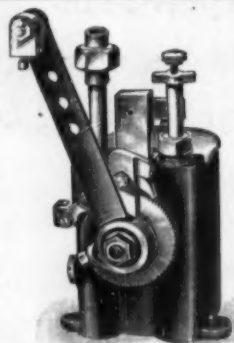
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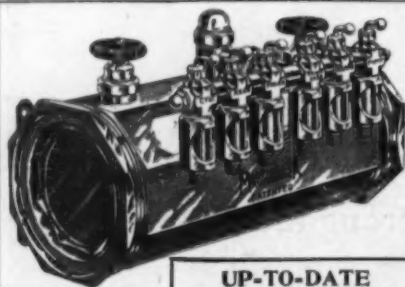
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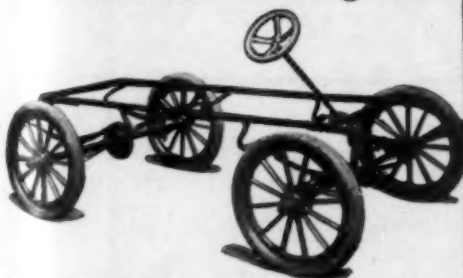
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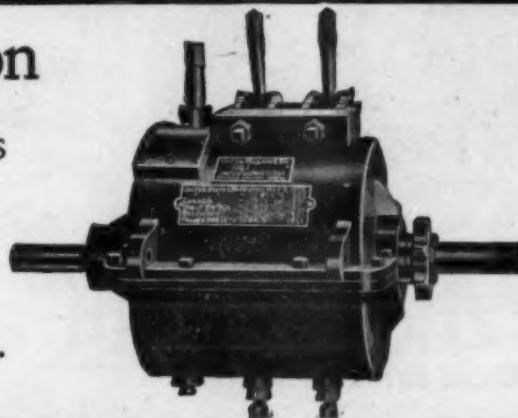
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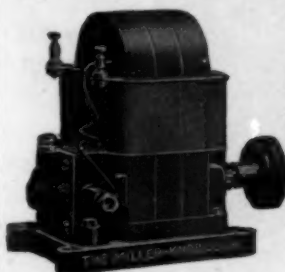
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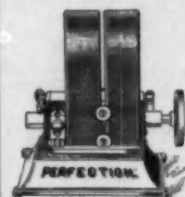


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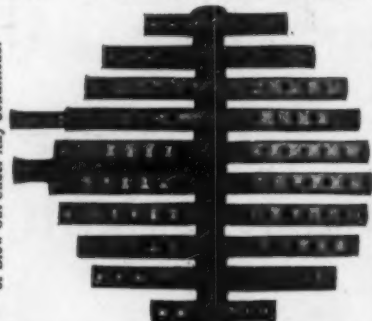
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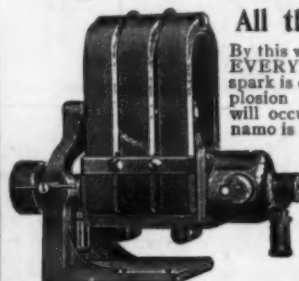
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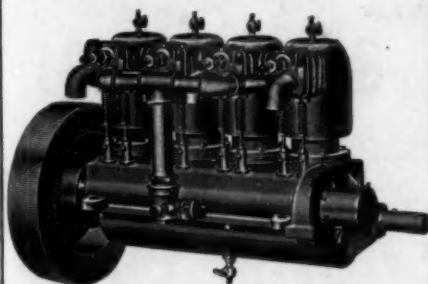


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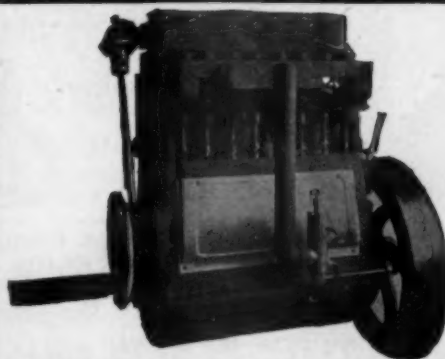
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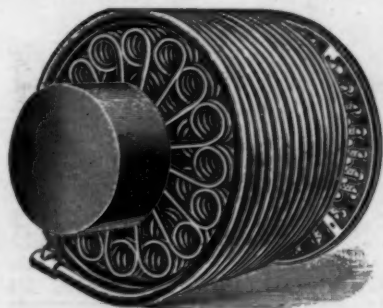
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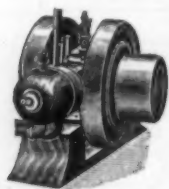
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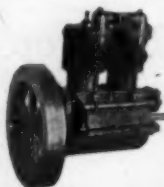
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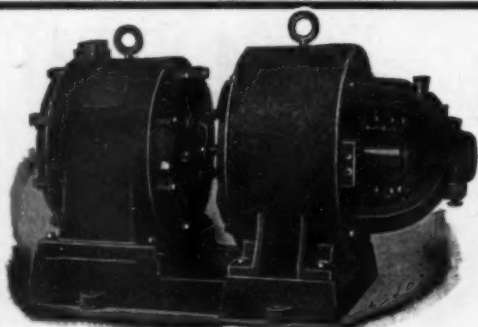


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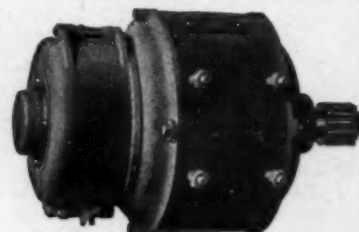
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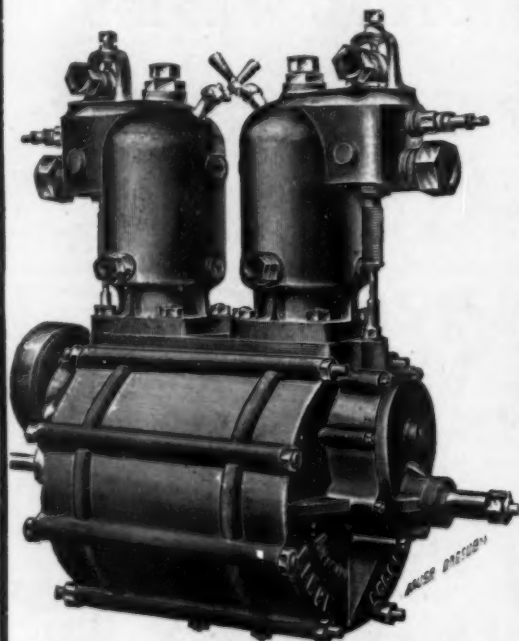


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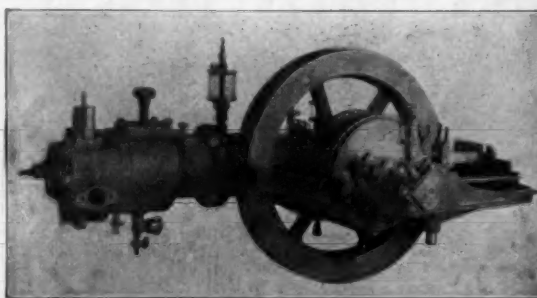
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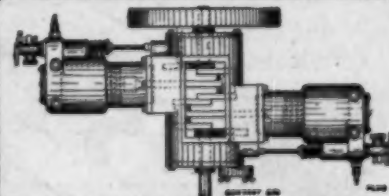
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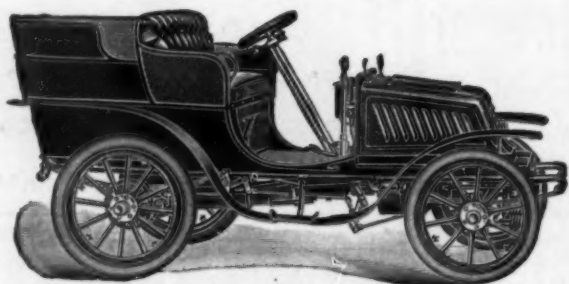
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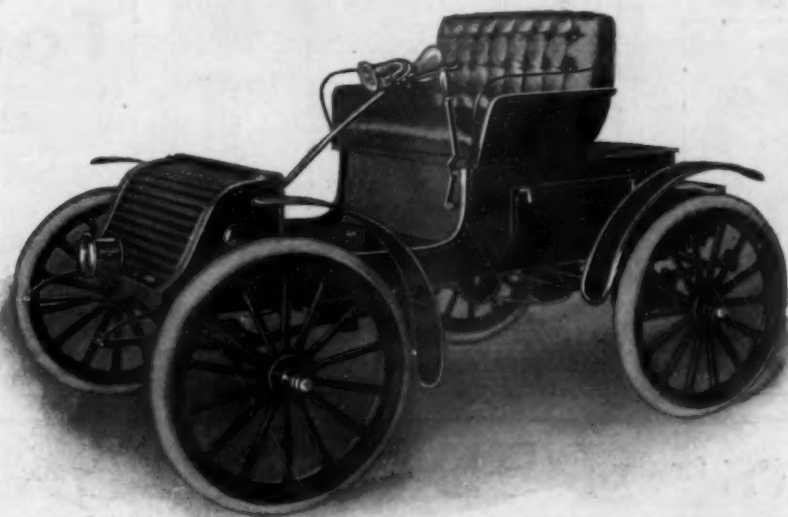
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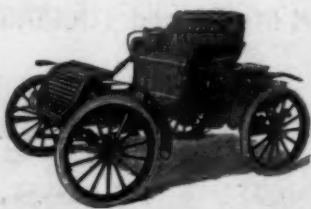
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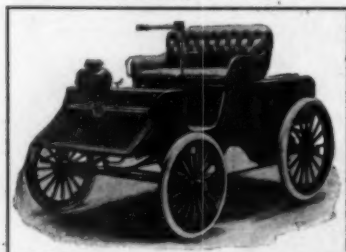


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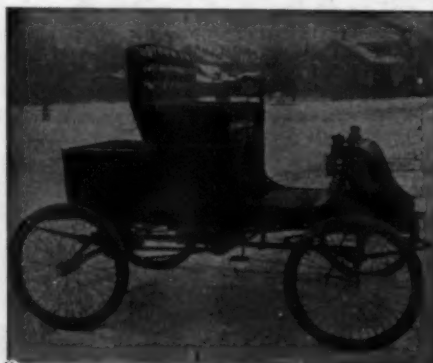


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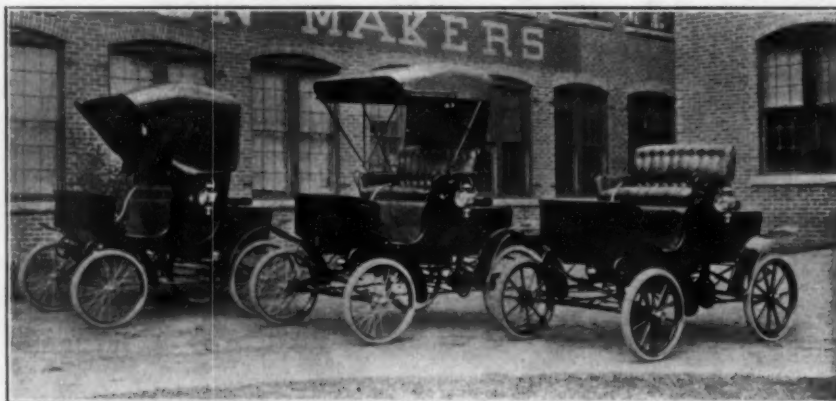
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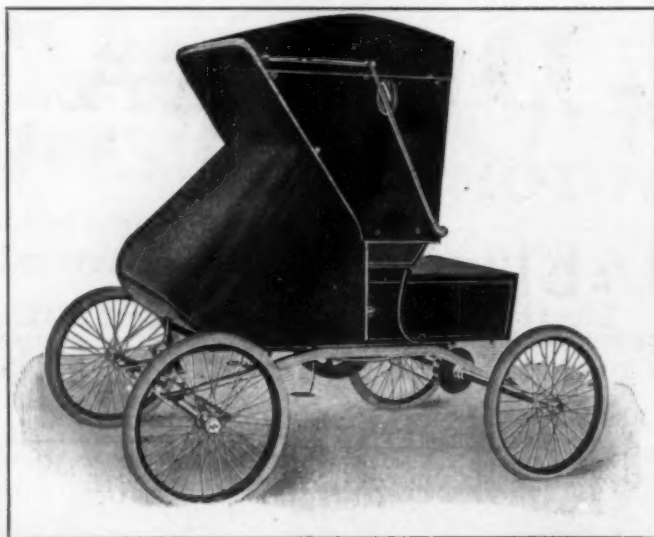
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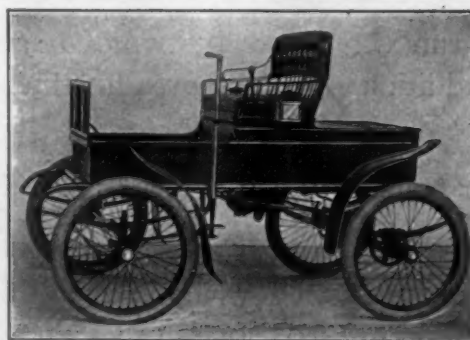
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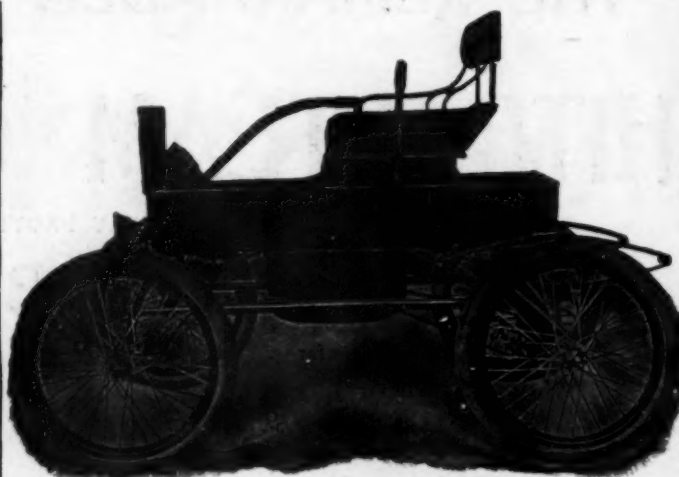
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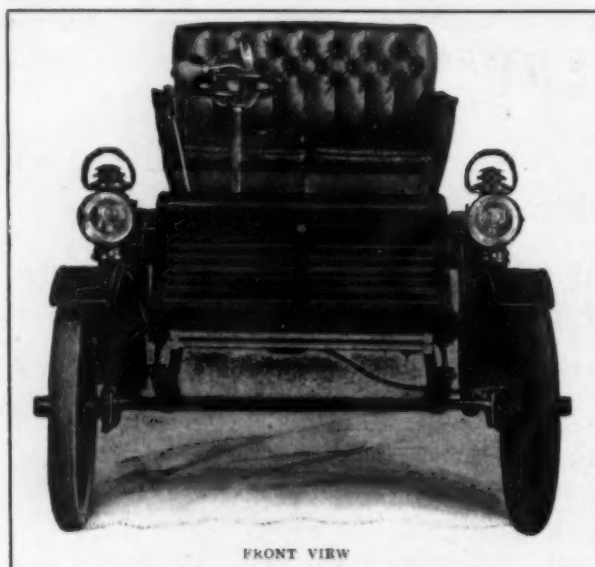
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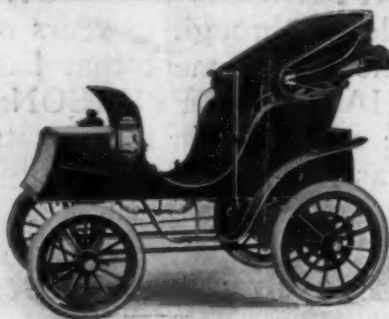
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